The New Scholasticism

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by Ramon A. di Nardo

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The "Intus Apparens" and the Immateriality of the Intellect *

by Richard J. Connell

Introduction

A. *The problem*

TO PROVE that the human intellect is immaterial St. Thomas, commenting on Aristotle's *De Anima*, offers the following argument:

> . . . Anything that is in potency with respect to an object, and able to receive it into itself, is, as such, without that object; thus the pupil of the eye, being potential to colors and able to receive then, is itself colorless. But our intellect is so related to the objects it understands that it is in potency with respect to them, and capable of being affected by them (as sense is related to sensible objects). Therefore, it must itself lack all those things which it of its nature is capable of understanding. Since, then, it is of such a nature that it is capable of understanding all sensible and bodily things, it must be lacking every bodily nature; just as the sense of sight, being able to know color, lacks all color. If sight itself had any particular color, this color would prevent it from seeing other colors, just as the tongue of a feverish man, conditioned by a bitter moisture, cannot receive a sweet flavor. In the same way, then, if the intellect were restricted to any particular nature, this connatural restriction would prevent it from knowing other natures. Hence he says: 'What appeared inwardly would prevent and impede its knowledge of what was without'; i. e., it would get in the way of the

* Men need the help of their friends, and those engaged in the speculative life are no exception. Although the weaknesses of this paper are my own, I have benefited from the criticisms of several people in arriving at what is good in it. Profit was derived from discussions with Mr. John Beach (formerly on the staff at Marquette), Mr. Edward Simmons of Marquette, Fr. William Baumgaertner of the St. Paul Seminary, and Fr. Henri DuLac of Notre Dame University. I am especially grateful to Mr. Marc Griesbach, my collegue at Marquette, for a fine critical reading of the first draft, which greatly aided the final determination of the problem.

intellect, and veil it so to say, and prevent it from inspecting other things. He calls 'inwardly appearing' any intrinsic thing connatural to the intellect, which so long as it 'appears' therein always prevents the intellect from understanding anything else; as we might say that the bitter moisture was an 'inwardly appearing' factor in a fevered tongue.[1]

With some minor variations St. Thomas presents substantially the same proof elsewhere:

. . . It must necessarily be allowed that the principle of intellectual operation which we call the soul of man, is a principle both incorporeal and subsistent. For it is clear that by means of the intellect man can know the natures of all bodies. Now whatever knows certain things cannot have any of them in its own nature, because that which is in it naturally would impede the knowledge of anything else. Thus we observe that a sick man's tongue, being infected with a feverish and bitter humor, is insensible to anything sweet, and everything seems bitter to it. Therefore, if the intellectual principle contained within itself the nature of any body, it would be unable to know all bodies. Moreover, every body has its own determinate nature. Therefore, it is impossible for the intellectual principle to be a body. . . .[2]

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[1] ". . . Omne enim, quod est in potentia ad aliquid et receptivum eius, caret eo ad quod est in potentia, et cuius est receptivum; sicut pupilla, quae sit in potentia ad colores, et est receptiva ipsorum, est carens omni colore: sed intellectus noster sic intelligit intelligibilia, quod est in potentia ad ea et susceptivus eorum, sicut sensus sensibilium: ergo caret omnibus illis rebus quas natus est intelligere. Cum igitur intellectus noster natus sit intelligere omnes res sensibiles et corporales, necesse est quod careat omni natura corporali, sicut visus caret omni colore, propter hoc quod est cognoscitivus coloris. Si enim haberet aliquem colorem, ille color prohiberet videre alios colores. Sicut lingua febricitantis, quae habet aliquem humorem amarum, non potest recipere dulcem saporem. Sic etiam intellectus si haberet aliquam naturam determinatam, illa natura connaturalis sibi prohiberet eum a cognition aliarum naturarum. Et hoc est quod dicit: 'Intus apparens enim prohibebit cognoscere extraneum et obstruet,' idest impediet intellectum et quodammodo velabit et concludet ab inspectione aliorum. Et appellat intus apparens aliquid intrinsecum connaturale intellectui, quod dum ei apparet, semper impeditur intellectus ab intelligendo alia; sicut si diceremus quod humor amarus esset intus apparens linguae febricitantis." *In Aristotelis Librum De Anima Commentarium*, ed. Pirotta, III, 7, n. 680.

[2] ". . . necesse est dicere id quod est principium intellectualis operationis,

Other places can be found where St. Thomas employs similar arguments to show the immateriality of the intellect,[3] but the quotations just given are a good representation of the basic proof, and therefore no others need be reproduced. I do wish, however, to present the outline of the demonstration which Cajetan gives in his commentary on the *Summa*:

> . . . that the human soul is incorporeal in being [in essendo] is proved a priori in this manner. Whatever is able to know all bodies does not have the nature of any body; but the human soul is a being of this sort; therefore. The minor is evident, because through his intellect man can know all bodies. The major is proved by the maxim, "whatever is able to know certain things has none of them in its nature." This in turn is proved: because one would impede the knowledge of others, to which the experience of the sense of taste testifies.[4]

Now as the reader is unquestionably aware, ultimately the intention of this argument is to show something about the physical or natural being of the human soul, namely, that it is a subsistent form; and therefore Cajetan is brought to remark

quod dicimus animam hominis, esse quoddam principium incorporeum et subsistentem. Manifestum est enim quod homo per intellectum cognoscere potest naturas omnium corporum. Quod autem potest cognoscere aliqua, oportet ut nihil earum habeat in sua natura; quia illum quod inesset ei naturaliter, impediret cognitionem aliorum; sicut videmus quod lingua infirmi quae infecta est cholerico et amaro humore, non potest percipere aliquid dulce, sed omnia videntur ei amara. Si igitur principium intellectuale haberet in se naturam alicuius corporis, non potest omnia corpora cognoscere. Omne autem corpus habet aliquam naturam determinatum. Impossible est igitur quod principium intellectuale sit corpus." *Summa Theol.*, I, 75, 2.

[3] Three may be mentioned: *Q. D. De Anima*, 2; *De Unitate Intellectus*, 1; *Quodl.* X, 3, 6. All references to the *Questiones Disputatae* and *Questiones Quodlibetales* are to the edition published by Marietti.

[4] ". . . quod anima humana sit incorporea in essendo, probatur sic a priori. Cognoscitivum omnium corporum nullam habet naturam corporis: anima humana est huiusmodi: ergo.—Minor patet: quia homo per intellectum potest cognoscere omnia corpora.—Maior probatur ex illa maxima: *Cognoscitivum aliquorum nihil eorum habet in sua natura.* Quae probatur: Quia unum impediret cognitionem aliorum. Quod declaratur experientia in sensu gustus." I, 75, 2, n. iii, ed. Leonina.

that one can speak of "to have the object in its own nature" in two ways: either according to a natural *esse* or according to an intentional *esse*.[5] Moreover, one can also consider "in its own nature" in two ways: either *inhesive*, as forms are in matter; or *compositive seu intrinsece*, as those things which compose are in the composed, and universally as anything which is intrinsic to the essence of a thing is said to be in its nature.[6] Thus, the major premise of St. Thomas' argument, the commentator says, should be understood as follows: "A knowing power which is essentially in potency to the knowledge of some object does not have intrinsically in itself according to a natural *esse* the nature of that object."[7] Furthermore, it is clear from the very presentation of the proof that the ultimate explanation of the conclusion must be looked for in the "intus apparens" proposition, which in its entirety reads, "intus apparens prohibet extraneum."

That the demonstration is sufficient to conclude to the proposition it intends is not immediately clear; and there are some objections which arise to point up the obscurity in the proof, chief of which are the following: 1) how can we know other immaterial beings if the intellect is immaterial in its natural being? 2) how can we know ourselves, especially our own intellects? In both cases it would appear that the *intus apparens* should prevent the intellect from knowing the immaterial being which is its object.

These difficulties are not original, for Cajetan raises them,[8]

[5] *Ibid.*, n. iv.

[6] *Ibid.*

[7] "Cognoscitivum in potentia essentiali aliquorum non habet in se intrinsece obiectum secundum naturale esse illius." *Ibid.* We wish to draw the reader's attention to the way in which Cajetan poses the problem. Although, in our opinion, the problem can be presented in terms of the intentional and entitative *esse* of the intellect, nevertheless it ought at first to be presented otherwise. These views will be manifested in the body of the essay.

[8] *Loc. cit.*

and St. Thomas himself makes use of the principal one when he inquires about the angel's knowledge of himself:

It would seem that one angel does not know another. For the Philosopher says that if the human intellect were to have in itself any one of the natures of sensible things, then such a nature existing within it would prevent it from apprehending external things; as likewise, if the pupil of the eye were colored with some particular color, it would not see every color. But, as the human intellect is disposed for understanding corporeal things, so is the angelic mind for understanding immaterial things. Therefore, since the angelic intellect has in it a determinate nature from among the number of such natures, it would seem that it cannot understand other angelic natures.[9]

However, St. Thomas' reply to this objection seems rather strange, for he appears to except the separated substance from the statement that the knower cannot possess the nature of the known:

The spiritual natures of the angels are distinguished from one another by a certain order, as was already observed. So the nature of an angel does not hinder him from knowing the other angelic natures, since both the higher and lower have an affinity with his nature, the only difference being according to their diverse degrees of perfection.[10]

But on the other hand he makes no such exception of the human possible intellect:

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[9] "Videtur quod unus angelus alium non cognoscat. Dicit enim Philosophus, in III *de Anima*, quod si intellectus humanus haberet in se aliquam naturam de numero naturarum rerum sensibilium, illa natura interius existens prohiberet apparere extranea: sicut etiam si pupilla esset colorata aliquo colore, non posset videre omnem colorem. Sed sicut se habet intellectus humanus ad cognoscendas res corporeas, ita se habet intellectus angelicus ad cognoscendas res immateriales. Cum igitur intellectus angelicus habeat in se aliquam naturam determinatam de numero illarum naturarum, videtur quod alias cognoscere non possit." *Summa Theol.*, I, 56, 2 ad 1.

[10] ". . . dicendum quod naturae spirituales angelorum ut invicem distinguuntur ordine quodam, sicut supra dictum est. Et sic natura unius angeli non prohibet intellectum ipsius a cognoscendis aliis naturis angelorum, cum tam superiores quam inferiores habeant affinitatem cum natura eius, differentia existente tantum secundum diversas gradus perfectionis." *Ibid.*

Concerning apprehensive powers it is not always true that the power is altogether devoid of the species of its object. It is false in regard to those powers which have a universal object, as in the case of the intellect, whose object is the whatness of things although it has whatness itself. It must, however, be devoid of the forms it receives.[11]

Although the possible intellect does not lack altogether the nature of its object, it does, nevertheless, lack those natures which it receives; and St. Thomas gives no indication that he intends to except spiritual natures—no qualification of this sort is explicitly declared by his text. The difficulties remain, therefore, and the problem—we agree with Cajetan—can be reduced to the following: why does the "intus apparens prohibet extraneum?"

B. *Cajetan's solution to the problem*

According to Cajetan the proposition "intus apparens prohibet extraneum" is true when one nature is not determinable by another.[12] Thus it follows that ". . . this proposition does not hold in those natures one of which is determinable by another: but only in those of which neither can be a determination of the other."[13] In other words, the "intus apparens" proposition is to be understood only ". . . of the *determined* nature of the object, not of the common nature. . . ."[14] Moreover, by "determined nature" Cajetan means one which ". . . is indeterminable by the natures of other objects of the knowing

[11] ". . . in apprehensivis potentiis non semper hoc est verum quod potentia denudetur totaliter a specie sui obiecti. Hoc enim fallit in illis potentiis quae habent obiectum universale, sicut intellectus cuius obiectum est quidditas, cum tamen habeat quidditatem; oportet tamen quod sit denudatur a formis illis quas recipit." *De Ver.*, XXII, 1 ad 8.

[12] The summary which we shall give of Cajetan's position is taken from his commentary on the *Summa*, I, 56, 2; 75, 2.

[13] ". . . propositio illa non tenet in naturis quarum una est determinabilis per alteram: sed in his tantum quarum neutra potest alterius esse determinatio." *Ibid.*, I, 56, 2, n. iii.

[14] ". . . propositio illa intelligitur de natura *determinata* obiecti, et non de natura communi; . . ." *Ibid.*, I, 75, 2, n. vii.

nature; and this is true of any species with respect to some other species of the same order, as white is indeterminable by other colors. The nature, however, is common which, although it is in itself a nature, is apt to be determined by the rest of the natures which are knowable by that potency; as is the transparent and the sense of sight with respect to color." [15] It is evident that ". . . a common nature does not impede, it is instead an aid; but a contracted nature impedes. For sight is not impeded by the transparent, but by whiteness or blackness; although the transparent is one of the visible things." [16] Hence, one angel can know another because ". . . his nature, as a common nature, is determinable by the others which he is able to know." [17] But because "every body has some determined nature" an intellect cannot have any corporeal nature connatural to it, and it is only to such natures, according to the Cardinal, that the "intus apparens" proposition can be applied.

Now although it is undeniable that the eminent Dominican Cardinal's commentary on the *Summa* is an excellent work, manifesting its author's profound grasp of philosophy and theology, his resolution of the difficulties accompanying the argument for the immateriality of the intellect does not seem to be sound. He appears to have erred in his understanding of the demonstration, an error which, it seems, he obscurely realized; for reputedly the Cardinal rejected in later life the opinion which he puts forth in his commentary on the *Summa*. Indeed, Cajetan apparently went so far as to deny that the immortality

[15] "Determinata natura vocatur, quae indeterminabilis est per naturas ceterorum obiectorum illius cognoscitivae naturae; qualis est species quaelibet respectu aliorum colorum. Communis vero vocatur quae, licet in se natura quaedam sit, determinari nata est per reliquorum naturas cognoscibilium ab illa potentia; ut disaphaneitas respectu colorum et sensus visus." *Ibid.*

[16] ". . . natura communis non impedit, sed promovet magis: sed bene natura contracta. Non enim visus impeditur diaphaneitate, sed albedine aut nigredine: cum tamen diaphanum unum sit visibilum." *Ibid.*

[17] ". . . natura sua, velut communis natura est determinabilis per reliqua cognoscibilia ab eo." *Ibid.*

of the human soul (to which this demonstration is a forerunner) was demonstrable.[18]

Returning to our problem, it is evident that the answer to the question, why does the "intus apparens prohibet extraneum," hinges upon a proper understanding of what is meant by "determined nature." But the distinction Cajetan has made seems to have no basis in reality and therefore does not resolve the problem. A nature which is a species in act within a genus but determinable by the other natures within that genus seems to be a contradiction, because if one thing is determinable by other things it is potential with respect to them; but that which is in potency to some genus, *secundum se* lacks the perfections of that genus (just as prime matter *in se* lacks all substantial perfection), otherwise it would be in act and in potency at the same time and in the same respect. As the Cardinal notes,[19] if there were some form which was determinable by all other forms, the possession of that first form would not prevent prime matter from simultaneously receiving the others; and according to Cajetan such a form is impossible only if it is the form of matter. Immaterial natures can have their own species and yet be determinable by other specific natures within the same genus.

During the course of this essay I shall attempt to show that the "intus apparens" proposition holds for the separated substances as well as corporeal natures, but for the moment, as a partial justification of my position in regard to Cajetan's commentary it may simply be noted that Cajetan makes no attempt to show why matter prevents a nature from being common in the way he understands the term; and this, I think, is enough to disqualify his views.

Furthermore, as his choice of an example Cajetan offers the transparent (diaphanum), which he says is determinable by all the colors and is itself something visible. But this, everyone will

[18] See the editor's introduction to Cajetan's *Commentaria in De Anima Aristotelis*, ed. Coquelle (Rome, 1938).

[19] I, 56, 2, n. iii.

agree, is contrary to common experience, for the more perfectly transparent something is the more invisible it becomes. Moreover, it is hardly possible to admit that St. Thomas understands "determined" as Cajetan does, for he says:

> After showing what colour and the transparent medium and luminosity are, the Philosopher now explains how the medium is related to colour. It is clear, from the foregoing, that the transparent medium is receptive of colour; for colour, we have seen, acts upon it. Now what is receptive of colour must itself be colourless, as what receives sound must be soundless; for nothing receives what it already has. The transparent medium is therefore colourless.[20]

St. Thomas repeats what Aristotle has said before him, and it does not seem likely that either would have shared in Cajetan's view of "determined nature." However, we should note that St. Thomas, following Aristotle, does hold the transparent to be visible in a certain manner:

> But, as bodies are visible by their colours, the transparent medium must itself be invisible. Yet since one and the same power apprehends opposites, it follows that sight, which apprehends light, also apprehends darkness, Hence, although the transparent medium of itself possesses neither light nor colour, being receptive of both, and is thus not of itself visible in the way that things bright or coloured are visible, it can, all the same, be *called* visible, as the darkness which is scarcely visible is seen. The diaphanum is therefore a kind of darkness, so long as it is not actually but only potentially transparent; for the same thing is the subject, sometimes of darkness, sometimes of light. Thus the diaphanum, while it lacks luminosity and is only potentially transparent, is darkness.[21]

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[20] "Postquam Philosophus ostendit superius quid est color, et quid diaphanum, et quid lumen, *hic ostendit, quomodo diaphanum se habeat ad colores.* Manifestum est autem ex praemissis, quod diaphanum est susceptivum coloris; est enim color motivus diaphani, ut supra dictum est. Quod autem est susceptivum coloris, oportet esse sine colore, sicut quod est susceptivum soni, oportet esse sine sono: nihil enim recipit quod iam habet: et sic patet quod diaphanum, oportet esse sine colore." *In II De Anima*, 15, n. 427.

[21] "Cum autem corpora sint visibilia per suos colores, sequitur quod diaphanum secundum seipsum sit invisibile. Quia vero eadem est potentia

Although it is quite true that St. Thomas here makes a case for the visibility of the transparent, he nevertheless is at pains to show that visibility is not said of color and the transparent in the same way: the latter is in itself *invisible*. And since the transparent is said to be visible as the "opposite" (the privation) is visible, it can hardly be said to have a specific nature within the genus which is common to light and color; for privations cannot belong to any genus of real being.

Hence, it appears that another solution must be found. Let us therefore direct our attention to the answer we propose.

C. *The plan of the essay*

I do not wish to burden the reader with a long presentation of already familiar doctrine, but for the sake of clarity and precision, it is necessary to present in outline some of the common doctrinal points upon which this interpretation depends. The notions which must be discussed are 1) the meanings of "determined;" 2) the distinction between intellect and essence in creatures; 3) the passive nature of every created intellect. From what is evident about these we hope to make the force of St. Thomas' argument manifest.

II. The Solution

A. *The meanings of "determined"*

In reply to the first objection of *Questiones Disputatae Quodlibetales*, VII, 1, article 1, St. Thomas distinguishes two uses of "determinatum:"

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cognoscitiva oppositorum, sequitur, quod visus qui cognoscit lucem, cognoscat et tenebram. Licet igitur diaphanum secundum se careat colore et lumine, quorum est susceptivum, et sic secundum se visibile non sit, eo modo quod sunt visibilia, lucida et colorata, tamen potest dici visibile, sicut videtur tenebrosum quod vix videtur. Diaphanum igitur est huiusmodi, idest tenebrosum, cum non est actu diaphanum, sed in potentia tantum. Eadem enim natura est subiecta quandoque quidem tenebrarum, quandoque autem luminis. Et sic diaphanum carens lumine, quod ei accidit, dum est in potentia diaphanum, oportet, quod sit tenebrosum." *Ibid.*

> . . . a thing is said to be determined in a twofold way: first, by reason of a limitation; in another way by reason of a distinction.[22]

According to this text something can be called "determined" for two reasons: 1) because it is limited; or 2) because it is distinct. Understood in its first sense it is apparent that every created nature is determined, because every created nature is finite or limited. And even though it is *simpliciter* more perfect, that which is in act in some genus, because it is limited to the perfecton of some species, is determined when compared to that which is in potency in the same genus. The latter, insofar as it is *all* species potentially, is truly unlimited or undetermined. Thus, in one way (as unlimited actuality) God is undetermined in comparison to creatures, and in another way (as unlimited potentiality) prime matter is undetermined in relation to material substance. But understood in its second sense, as that which is distinct in itself, *anything,* whether finite or infinite, potency or act, can be called *determined.* The only requirement is that those things to which the name is applied be distinct or separate one from the other. Taken this way, God has a determined nature and so does prime matter.

My intention is to show that "determined nature," when used in the demonstration of the intellect's immateriality, must be understood in the sense of "limited," but to accomplish this there are still several points of doctrine to be considered. However it might be wise to note, in passing, that St. Thomas speaks of the possible intellect (inasmuch as it is in potency) as being *undetermined,* in contrast to this same power's objects which he declares to be *determined*:

> . . . the possible intellect is in potency to intelligible objects (intelligibilia) as the undetermined to the determined. For the possible intellect does not have determinately the nature of any sensible thing. However, an intelligible object is a determined nature belonging to

[22] ". . . aliquid dicitur determinatum dupliciter; primo ratione limitationis; alio modo ratione distinctionis." See also VII, 3, 6.

some species. Hence, the possible intellect is compared to intelligible objects as a canvas to determined pictures. . . .[23]

Let us turn our attention now to the doctrine upon which the argument hinges.

B. *Every created intellect is distinct from the essence of the knower*

It is common doctrine in the Aristotelian and Thomistic tradition that potencies are specified by their acts. Every potency exists for the sake of its act and takes its formal or specific determination from the act to which it is proportioned; consequently, wherever there is a formal distinction in acts there is also a formal difference in the potencies ordered to them. Arguing from this principle, it follows that the intellect of a creature is necessarily distinct from its essence. Because the operation of knowing in created substances is distinct from the existence of the substance,[24] the intellect of the knower (which is compared to intellection as potency to act) must necessarily be distinct from the essence of the knower (essence is compared to *esse* as potency to act). Briefly, because *esse* and *intelligere* are distinct acts in every intelligent creature, the essence and intellectual power are also distinct potencies, and only in God where *esse* and *intelligere* are one is there an identity of intellect and substance. It is apparent, therefore, that created intellects are predicamental accidents distinct from both the substance of the knower and other operative potencies as well.

Having declared the principle from which we must proceed, let us consider a few things about the intellect in comparison

[23] ". . . Est enim intellectus possibilis in potentia ad intelligibilia, sicut indeterminatum ad determinatum. Nam intellectus possibilis non habet determinate naturam alicuius rerum sensibilium. Unumquodque autem intelligibile, est aliqua determinata natura alicuius speciei. Unde supra dixit quod intellectus possibilis comparatur ad intelligibilia, sicut tabula ad determinatas picturas." *In III De Anima*, 10, n. 738.

[24] *Summa Theol.*, I, 54, 3.

to matter. From experience we know that the intellect is an operative potency—a proximate principle of operation—and by this alone if by nothing else the intellect is distinguished from every material potency, whether in the accidental or the substantial order. Nothing that is properly matter, and consequently passive in the order of exercise, is a principle of operation. Operative potencies suppose a being in act—even passive operative potencies have in themselves the power to exercise or elicit operations, and their receptivity in the face of their objects is solely in the order of specification.[25] No object moves an operative power in the order of exercise, which is the order of existence. Consequently this kind of potency has its origin in the actuality of the substance and its primary root therefore is in the substantial form. *Operation follows upon a being in act,* and although the passive operative potencies only determine the operator to the object in general and must themselves be reduced to act with respect to some particular species by a form received from the object, nevertheless, since such faculties *do not* receive their ability to exercise operations from the object, we know that they are founded in the form; and every operative potency is active in this sense.

Furthermore, it should be noted that when we say the senses receive a form in an *immaterial mode* we are forced to admit that the receptivity of the sense is founded on the *actuality* of the being; this passivity, therefore, originates in the substantial form. To the extent that a species is received immaterially—to that extent it is received by the form of the receiver rather than his matter. If the mode of reception varies, so must the receiver—that is, the principle of reception. (However, as long as the receiver is a composite potency, the reception will be material to some degree.) Operative potencies, therefore, especially knowing powers, are radically distinct from matter.[26]

[25] See John of St. Thomas, *Cursus Philosophicus*, Phil. Nat., IV, q. 2, a. 3 ed. B. Reiser (Turin, 1937).

[26] We have dwelt upon the operative character of the intellect because

C. *Every created intellect is a passive power*

1. *The principle of knowledge is a similitude*

Knowledge is an assimilation;[27] it implies a similitude between knower and known. The act of knowing, in which knower and object are united, is accomplished through a similitude by which the object is made present to the power. A similitude, of course, is a likeness, a representation of another, and therefore knowledge formally as such implies a relation to another.[28] Briefly, *a knowing power is in act as such only when it is assimilated to the known.*

However, as St. Thomas remarks,[29] it is possible to distinguish a threefold similitude: for two things are similar 1) when each has the same thing in act; or 2) when one has in potency that which the other has in act; or 3) the potency itself and its act (as opposed to the thing which has the potency and the thing which has the act) are similar and constitute a similitude, for the act can be realized in the potency only insofar as the latter is proportioned to the former.

Now since knowing is an *actus perfecti* and follows upon a being in act, knowledge occurs when the knower and the known are alike in act. The similitude according to which the knowing power is assimilated to the object is that which exists when knower and known are one in act; that is, when they possess the same form. Although it is legitimate to speak of a similitude existing between a knowing power and its object even when the former is in the state of potentiality with regard to the act of knowing (according to the third kind of similitude), this similitude is not the one which defines the act of knowledge.

the capacity to receive an intentional form is the capacity of a being in act; hence matter can never receive a form intentionally.

[27] Assimilation is understood as "motus ad similitudinem." One thing is assimilated to another when it is made similar to it.

[28] St. Thomas, *De Ver.*, II, 6 ad 17.

[29] *Summa Theol.*, I-II, 27, 3.

Furthermore, unlike the agent which assimilates many things *to itself* through *one* form (as a flame makes many things like itself by heating them), the knower must be assimilated *to many things* and must therefore possess in some manner the *many* forms or perfections of the objects he knows.

2. *The passivity of created intellects*

Experience teaches us that the human intelligence is a passive power.[30] Because we can acquire knowledge we do not yet possess, we know that our intellects are potential, and that they operate by a form which is received. But it is not the intellect alone that is passive, for any power whatsoever which is distinct from the form by which it is proximately prepared for operation is passive in respect to that form; and since every created intellect is related to its form in this way, it can be seen that every created intelligence is a passive power. (It cannot be said, however, that every power which is a composite of matter and form is passive simply because it is composed of two such principles. Vegetative powers, for example, are of this sort, yet they are active, for in faculties of this kind it is the composite which is the power and not just the matter. In regard to the intellect, however, it is that which *receives* the form that is the power, not the "composite" of intellect and form.)

But the passivity of created intelligences can be made more manifest by arguing directly and necessarily from the nature of a finite knowing power:

> The sense . . . is a passive potency, because the sense cannot be in act all those things to which by its nature its operation extends. For there cannot be something which has all colors in act. Therefore, it is necessary that sight be able to know all colors insofar as it is in a certain manner all colors in potency. . . .

[30] Passive is taken in its most general sense. "*Communiter* quidem dicitur passio receptio alicuius quocumque modo; et hoc sequendo significationem vocabuli: nam passio dicitur a *patin* graece, quod est recipere." *De Ver.*, XXVI, 1.

Similarly, the intellect is able to know all beings, because being and the true, which is the object of the intellect, are convertible. However, no creature, since it is a finite being, can be all being in act; for this belongs only to God, who is the source of all being, and who has all things in himself in a certain manner. . . . And therefore no creature can understand without an intellect which is a passive potency, that is, receptive.[31]

Substantially the same doctrine is repeated in another passage:

. . . the intellect of the human soul is in potency to all things. However, it is impossible for any created being to be perfectly the act and likeness of all beings, for then, it would possess the nature of being in an infinite manner. Hence, only God can understand all things in Himself and without any addition. But every created intellect understands through some additional species, either acquired by it, as happens with us, or given in creation or infused, as in angels.[32]

And in yet another passage:

. . . the intellect . . . has an operation extending to universal being. We may therefore see whether an intellect is in act or potentiality by observing how the intellect is related to universal being. For there is an intellect whose relation to universal being is that of the act of all being; and such is the divine intellect, which is the essence of God, in

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[31] "*Sensus* autem potentia passiva est; quia non potest esse in actu omnium ad quae se extendit sua operatio per naturam potentiae. Non enim potest esse aliquid quod actu habeat omnes colores. Et ideo oportet quod visus sit cognoscitivus omnium colorum, secundum quod est potentia omnes colores quodammodo, . . .

"*Similiter etiam intellectus* est cognoscitivus omnium entium; quia ens et verum convertuntur, quod est obiectum intellectus. Nulla autem creatura potest esse in actu totius entitatis, cum sit ens finitum: hoc enim est solius Dei, qui est fons omnium entium, omnia quodammodo in se praehabens, . . . Et ideo nulla creatura potest intelligere sine aliquo intellectu qui sit potentia passiva, idest receptiva." *In III Sent.*, d. 14, 1, 2.

[32] ". . . intellectus animae humanae est in potentia ad omnia entia. Impossibile est autem esse aliquod ens creatum quod sit perfecte actus et similitudo omnium entium, quia sic infinite possideret naturam entitatis. Unde solus Deus per seipsum sine aliquo addito potest omnia intelligere. Quilibet autem intellectus creatus intelligit per alias species superadditas, *vel* acquisitas, sicut in nobis accidit, *vel* concreatas, sive infusas, sicut in angelis." *De Ver.*, XX, 2.

which, originally and virtually, all being pre-exists as in its first cause. Therefore the divine intellect is not in potentiality, but is pure act. But no created intellect can be as act in relation to the whole of universal being; for then it would needs be an infinite being. Therefore no created intellect, by reason of its very being, is the act of all things intelligible; but it is compared to these intelligible things as potentiality to act.[33]

An intellect is a power whose operation is absolutely universal, extending to all being. Now powers are related to their objects either actively or passively; and if an intellect were to be related actively to its object, in itself it would have to be in act with respect to all those things to which its operation extends. This would demand that the intellect be a similitude of all being, that it be infinite. It is evident, therefore, that the only intellect which is related to its object as an active power is the Divine Intellect. No created form, whether subsisting or inhering, can be a representation of all being. In the words of St. Thomas: ". . . the perfect likeness of the whole of all being cannot but be infinite. And just as the nature of a separated substance is not infinite, but limited, an intelligible likeness existing in it cannot be infinite, but is limited to some species or genus of being; hence a plurality of such likenesses is required for the comprehension of all being." [34] In a certain way there

[33] "Intellectus enim . . . habet operationem circa ens in universali. Considerari ergo potest utrum intellectus sit in actu vel potentia, ex hoc quod consideratur quomodo intellectus se habeat ad ens universale. Invenitur enim aliquis intellectus, qui ad ens universale se habet sicut actus totius entis: et talis est intellectus divinus, qui est Dei essentia, in qua originaliter et virtualiter totum ens praeexistit sicut in prima causa. Et ideo intellectus divinus non est in potentia, sed est actus purus.—Nullus autem intellectus creatus potest se habere ut actus respectu totius entis universalis: quia sic oportet quod esset ens infinitum. Unde omnis intellectus creatus, per hoc ipsum quod est, non est actus omnium intelligendum, sed comparatur ad ipsa intelligibilia sicut potentia ad actum." *Summa Theol.*, I, 79, 2.

[34] ". . . totius entis universalis perfecta similitudo esse non potest nisi infinita; sicut autem natura substantiae separatae non est infinita sed terminata, ita similitudo intelligibilis in ea existens non potest esse infinita,

is a disproportion between the created intellect and the created similitude, for, since every created similitude must be finite, no one such form can perfectly determine a created intellect to the knowledge of all things. Thus the intelligence of the creature must be receptive of many forms.

In book II of the *Summa contra Gentiles,* chapter 98, St. Thomas considers how one separated substance knows another, and in the treatment of this question he makes use of doctrine bearing upon the limited nature of the finite similitude, which, in spite of the risk of being repetitive, we wish to consider. St. Thomas says:

> . . . since none of these separated substances is by its essence a sufficient principle of the knowledge of all other things, there must be added to each of them over and above its own substance, certain intelligible likenesses, whereby each of them is enabled to know another in its proper nature.[35]

Now the reason for this

> . . . can be made clear as follows. The proper object of intellect is intelligible being, which includes all possible differences and species of being, since whatever can be, can be known.[36]

An intellect is a potency which is ordered to intelligible being as its object, and it is therefore ordered to being universally; for whatever can be, can be known. Hence, an intellectual power has a certain infinity due to its ordination to an absolutely universal object. But

sed terminata ad aliquam speciem vel genus entis; unde ad comprehensionem totius entis requiruntur plures huiusmodi similitudines. *Sum. cont. Gent.*, II, 98.

[35] ". . . cum nulla huiusmodi substantiarum secundum suam essentiam sit sufficiens principium cognitionis omnium aliarum rerum, unicuique earum, supra propriam substantiam, oportet superaddere quasdam intelligibiles similitudines, per quas quaelibet earum aliam in propria natura cognoscere possit." *Sum. con. Gent.*, II, 98.

[36] "Hoc autem sic manifestum esse potest. Est enim proprium obiectum intellectus *ens intelligibile*: quod quidem comprehendit omnes differentias et species entis possibiles; quicquid enim esse potest, intelligi potest." *Ibid.*

> . . . since all knowledge is brought about by way of likeness, the intellect cannot know its object wholly unless it has in itself the likeness of all being and of all its differences. But such a likeness of all being, can be nothing other than an infinite nature: a nature not determined to some species or genus of being, but the universal principle of all being and the power productive of all being; and this, as was shown in Book I, is the divine nature alone. Indeed, no other nature can be the universal likeness of all being, since every other nature is limited to some genus and species of being. It therefore remains that God alone, by His essence, knows all things. Every separated substance, on the other hand, is by its nature possessed of a perfect knowledge only of its own species; while the possible intellect by its nature knows not at all, but through the intelligible species. . . .[37]

It is necessary to repeat, because of its importance to the argument, that between the nature of a created substance (considered as the form by which he knows) and his intellect there is a certain disproportion. No created essence can be an adequate similitude of all intelligible being, but intelligible being is, nevertheless, the object of even the created intellect. The substance of every creature is limited to a genus and species, and not one such being can adequately represent some other species in its proper distinction. The act of knowing is measured by the similitude which is its principle, and therefore whatever is not contained in the principle cannot be known. The separated substance can know *himself* perfectly through his essence, but since one separated substance contains the perfection of other

[37] ". . . Cum autem omnis cognitio fiat per modum similitudines, non potest totaliter suum obiectum intellectus cognoscere nisi habeat in se similitudinem totius entis et omnium differentiarum eius. Talis autem similitudo totius entis esse non potest nisi natura infinita, quae non determinatur ad aliquam speciem vel genus entis, sed est universale principium et virtus activa totius entis: qualis est sola natura divina, ut in Primo . . . ostensum est. Omnis autem alia natura, cum sit terminata ad aliquod genus et speciem entis, non potest esse universalis similitudo totius entis. Relinquitur igitur quod solus Deus per essentiam omnia cognoscat; quaelibet autem substantiarum separatarum per suam naturam cognoscit, perfecta cognitione, suam speciem tantum; intellectus autem possibilis nequaquam, sed per intelligibilem speciem, . . ." *ibid.*

beings only commonly and not properly or specifically (as for example, when we understand the power of nutrition in man to be generically similar to the power of nutrition in a plant; the two have only a common likeness, for one makes flesh while the other makes cellulose, etc.), he cannot have perfect knowledge of any other being through his own essence. The specific perfection of one creature is not possessed by others. The only being which contains in itself the likeness of all being, is God. God, therefore, can know all things through Himself; but since every created intellectual substance is finite (that is, determined or limited to some genus and species), it follows that all such substances must have intelligible species added to them in the manner of accidental determinations if they are to know other things. These intelligible species supply for the representational deficiencies of the creature's essence.

To put the matter a little differently, what makes the use of intelligible species necessary—the limited nature of the finite similitude—is also what requires that the created intellect be a passive power. Such an intelligence cannot be in act through its essence; rather, it must operate through forms which are *other* than it. As St. Thomas says,

> . . . the intellect in act is altogether, that is, perfectly, the thing known. . . . This should not be understood to mean that the *essence*[38] of the intellect becomes the thing known, or its species, but that the intellect is completely informed by the species of the thing known when it knows it in act.[39]

Through its own essence a created intellect is only potentially a likeness of its object. It becomes the known in act through a form which is distinct from it. Moreover, the knowledge the

[38] Italics ours.

[39] ". . . intellectus secundum actum est omnino, id est perfecte, res intellecta. . . . Quod quidem intelligendum est, non quod essentia intellectus fiat res intellecta, vel species ejus, sed quia complete informatur per speciem rei intellectae dum eam actu intelligit." *Quodl.*, VII, 1, 2.

separated substance has of himself (and he always knows himself in act) is not an exception to this; for the essence and intellect of this creature are distinct things, and the one is form in relation to the other. In these substances, too, the intellectual power is not known through its own essence as a power, but through a form which is distinct from that power.

Although up to now we have been speaking universally of created intelligences, certain distinctions must be made between the possible intellect of the human soul and the intelligence of the angels:

> . . . potentiality has a double relation to act. There is a potentiality which is always perfected by its act, as is said in the case of the matter of the heavenly bodies. And there is another potentiality which is not always in act, but proceeds from potentiality to act, as we observe in things that are corrupted and generated. Hence the angelic intellect is always in act as regards those things which it can understand, by reason of its proximity to the first intellect, which is pure act, as we have said above. But the human intellect, which is the lowest in the order of intellects and most remote from the perfection of the divine intellect, is in potentiality with regard to things intelligible, and is at first *like a clean tablet on which nothing is written,* as the Philosopher says. . . .[40]

Potencies have a twofold relation to their acts. Some are always perfected by their acts and never exist as separated from them. For example, according to the hypothesis of the ancients the heavenly bodies were composed of matter and form; and although the matter of these bodies was held to be a pure potentiality, it nevertheless had a capacity for only one form,

[40] "Potentia autem dupliciter se habet ad actum. Est enim quaedam potentia quae semper est perfecta per actum; sicut diximus de materia corporum caelestium. Quaedam autem potentia est, quae non semper est in actu, sed de potentia procedit in actum; sicut invenitur in generabilibus et corruptibilibus.—Intellectus igitur angelicus semper est in actu suorum intelligibilium, propter propinquitatem ad primum intellectum, qui est actus purus. . . . Intellectus autem humanus, qui est infimus in ordine intellectuum, et maxime remotus a perfectione divini intellectus, est in potentia respectu intelligibilium, et in principio est *sicut tabula rasa in qua nihil est scriptum,* ut Philosophus dicit. . . ." *Summa Theol.*, I, 79, 2.

and what is more important, it always possessed that form in act. Now the intelligence of the separated substance is a power of this first sort; for although it is potential, from the first moment of its existence it possesses all those forms by which it knows. In the natural order it never acquires a new species. Other potencies, however, are not always actuated by their forms, but must *acquire* them, and the human intellect is a potency of this second kind. Man's reason, therefore, is reduced to act by its object.

But despite such differences the human and angelic intellect *are* alike in that each is only passively ordered to its object, *ens intelligibile*. Both powers in themselves are potential—neither is in act. If some finite intellect were an active power—if it were in act through itself—then that intellect could not be ordered to being universally as its object. A finite active intellect could know adequately only that to which it would be determined by its form. It would be like a separated substance whose essence was his intellect, for such a being could know only himself adequately. Thus, every finite intelligence must be a passive power which is actuated by a form distinct from the essence of the power.

An important objection, however, must be forestalled before continuing, for it cannot be maintained that an active intellect of the sort described would be capable of receiving other species. Nothing receives insofar as it is in act but only insofar as it is in potency,[41] and to ask that an intellect be simultaneously some finite similitude in act and others in potency is to ask the impossible. Whenever some being is one thing in act and others

[41] ". . . nulla res, quantumcumque materialis, recipit aliquid secundum id quod est formale in ipsa, sed solum secundum id quod est materiale in ea; sicut anima nostra non recipit illuminationem ratione intellectus agentis, sed ratione possibilis; velut etiam res corporales non recipiunt aliquam impressionem ex parte formae, sed ex parte materiae et tamen intellectus possibilis noster est simplicior quam aliqua forma materialis. . . ." *De Ver.*, IX, 1 ad 12.

in potency it is so by reason of different principles. Material substances, for example, are one being in act through their form and other beings in potency through their matter. Similarly, as we have already pointed out, that by which the intellect is in act (its form) is other than that by which it is potency. To suppose that the intellect is one thing in act and others in potency through one and the same principle is to suppose a contradiction; for if an intelligence were ordered to one thing in act and others in potency according to the same formality, it would follow that it was in act and in potency at the same time and in the same respect, which is manifestly contradictory. On the other hand, if the intellect were ordered to one formal object insofar as it was active and to another formal object insofar as it was passive, it would be several formally distinct powers, and there could then be no question of *one* intellect. This is obviously an equally unacceptable position.

Thus, no finite active intelligence (or any other finite active power, for that matter) could be ordered to being universally, for it would be naturally determined or limited to one thing and unable to receive the similitudes of others outside the formality of its object. In other words, the "intus apparens," or connatural determination would be an obstacle to the knowledge of other things. Moreover, the same determination would occur whether the intellect was a form or whether it was constituted as an operative power through the union of potency and form, for in the latter case as in the former the power would have a finite nature in act. Hence, because no created intellect can be substantially either a form or a composite of potency and form, it follows that it must be substantially in potency and therefore not proportioned *in act* to any object whatsoever. This is the same as saying that every created intelligence must be undetermined.

Having established that an intellectual power must be purely

potential, there remains only the business of completing the interpretation by applying the above doctrine to the question, why cannot a corporeal operative potency be an intellect? Or in other words, why cannot such a power be capable of receiving any intentional form whatsoever?

In order to answer this question explicitly we shall proceed as follows: Accepting that every form received in matter is a finite act, we may then say that since every operative potency constituted by a form received in matter is limited, and because every corporeal operative power is an operative potency constituted by a form received in matter, therefore it follows that every corporeal power is limited—*which is the same as saying that it is connaturally determined.* Unlike the intellect, which is substantially in potency, corporeal operative powers must be composites; for matter is a pure potency and cannot be a principle of operation through itself but only through a received form. Hence, because every corporeal operative power is substantially in (first) act, and therefore determined, such potencies can be ordered only to those objects to which they are proportioned by their limited forms. As a result *their capacity to receive is limited, and they are unable to take on any form which is outside their own determined genus.* This is manifestly the kind of potencies the senses are.[42] Thus, we may argue as follows: no corporeal knowing power is able to receive all intentional forms, and every intellect is able to receive all

[42] After distinguishing first act and second act in the intellect St. Thomas says, commenting on Aristotle: ". . . Considerandum est ergo . . . quod sicut in scientia est duplex potentia et duplex actus, ita est et circa sensum. Nam quod nondum habet sensum et natum est habere, est in potentia ad sensum. Et quod iam habet sensum et nondum sentit, est potentia sentiens, sicut circa scientiam dicebatur. Sicut autem de potentia prima aliquid mutatur in primum actum, dum acquirit scientiam per doctrinam; ita de prima potentia ad sensum, aliquid mutatur in actum, ut scilicet habeat sensum per generationem. Sensus autem naturaliter inest animali: unde sicut per generationem acquirit propriam naturam, et speciem, ita acquirit sensum. Secus autem est de scientia, quae non inest homini per naturam sed acquiritur per intentionem et disciplinam." *In II de Anima*, 12, n. 373.

intentional forms, therefore no intellect is a corporeal power. This was the conclusion to be established.

However, because it is the fundamental point of doctrine in this exposition, let us manifest the determined nature of composite powers more thoroughly by comparing the intellect in first act to the sense. The possible intellect is reduced to act by an *habitus,* and although in considering the *habitus* one cannot abstract from the intelligible species, it is the *habitus,* nevertheless, which is the principle of unity according to which the intellect is determined to some genus of object. The *habitus* is, therefore, comparable to the substantial form of the sense in this regard. Moreover, it is pertinent to note that if some such quality (for example, geometry) were connatural to the intellect the latter would be unable to receive other *habitus* for the reason given earlier.[43] However, despite its inability to receive forms outside its genus, such a connaturally determined intellect would *not* be prevented from receiving further species within the formality of its object, and such an intellect would be like the senses, which can receive intentional forms although only in a limited respect.

Yet it is precisely insofar as it is in first act that the intellect differs from the sense. The intellect is reduced to first act by an *habitus,* but this first act does not confer existence upon the possible intellect; it neither makes the intelligence to be a power nor gives it the ability to elicit operations. On the other hand, the substantial form of the sense, which is a first act and which proportions the sense to some genus of object, is also that which causes the sensitive power to exist as such. In no way is the ability to operate *presupposed* to the reception of first act in the case of a corporeal knowing power; on the contrary, the operative nature of the potency *results* from its being in first act.[44] Consequently, it follows that every corporeal knowing

[43] Page 18.

[44] St. Thomas remarks: ". . . materia prima non potest agere aliquam actionem nisi perficiatur per formam." *De Ver.,* VIII, 6.

power is connaturally finite or limited and is therefore incapable of being ordered to an unlimited or absolutely undetermined object, that is, *ens universale.*

In summary, then, the argument may be restated somewhat differently as follows: no connaturally determined operative potency can be ordered to an undetermined or unlimited object, but every intellect is ordered to an undertermined or unlimited object, therefore no intellect is connaturally determined. Using this conclusion as a minor premiss we may then subsume it under the proposition over which we labored so long and construct the following syllogism: because every corporeal knowing power is connaturally determined, and because no intellect is connaturally determined, it follows that no intellect is a corporeal knowing power. And so if the possible intellect is an operative potency uncomposed of matter and form, the only remaining alternative is that it be a potency of the form alone. And from this it plainly follows that the substantial form of man is subsistent.

Returning now to the original citation in order to compare our doctrine to the letter of the demonstration as it is presented in the *De Anima,* we may note that the argument begins with the following proposition: "Anything that is in potency with respect to an object, and able to receive it into itself, is, as such, without that object; . . ." Now manifestly the human intellect is this sort of potency, so it ". . . must itself lack all those things which it of its nature is capable of understanding." But in the text this proposition is then contracted by being applied to corporeal natures: ". . . since then it is of such a nature that it is capable of understanding all sensible and bodily things, it must be lacking every bodily nature; . . ." and the reason is, of course, that ". . . if the intellect were restricted to any particular nature, this connatural restriction would prevent it from knowing other natures." But in order for a determined nature to impede the assimilation of the intellect to its object

it must interfere with the reception of a similitude, and this is how St. Thomas understands the "intus apparens prohibet extraneum," for he says: ". . . a feverish tongue, which has some bitter humour cannot *receive* (italics ours) a sweet flavor."[45] Thus, it appears that this interpretation resolves to first principles and that it is in conformity with the letter of St. Thomas.

3. *The intentional union*

The reader will have observed that the resolution of the argument proceeds without any specific reference to the distinction between the natural and intentional being of the intellect, nor does St. Thomas at any time have recourse to it. But because Cajetan poses the problem in these terms we have a certain obligation to consider the distinction and see how it might be used in the demonstration.

It is fundamental to the doctrine of knowledge in the Aristotelian and Thomistic tradition that the union between knower and known obtained through the medium of the similitude is an intentional union; and the form which is the principle of the act of knowing is characterized by the different mode of existence it has in the knower as compared to the mode of existence it has in the object known:

> . . . the sense receives the form without the matter, because the form has one mode of existing in the sense and another in the sensible. For in the sensible thing it has a natural existence, in the sense, however, it has an intentional and spiritual existence.[46]

The immediate problem, therefore, is to determine what is *per se* to the intentional form as such.

[45] ". . . lingua febricitantis, quae habet aliquem humorem amarum, non potest recipere dulcem saporem." *In III de Anima*, 7, n. 680.

[46] ". . . sensus recipit formam sine materia, quia alterius modi esse habet forma in sensu, et in re sensibili. Nam in re sensibili habet esse naturale, in sensu autem habet esse intentionale et spirituale." *In II de Anima*, 24, n. 551.

To know implies having the form of another; therefore the form by which the knowing power operates must be the form of the thing known, existing within the power. Such a form, therefore, has a twofold function: 1) to represent the object—that is, to substitute for it—and 2) to enable the power to operate by serving as its form. Briefly, it can be said that in one respect the intentional form is the form of the known, and in another respect it is the form of the knower. Hence, intentional forms can be categorized according to the genus of the object represented; and classified in this way the genera of the intentional species are many. But when the intentional species are considered in a second way as the prinicple of the power's operations, they all belong to the same genus and that is quality.

The distinction we have just presented is also made by John of St. Thomas:

> . . . a species informs its potency in a twofold way; namely, entitatively or by inhering in it, and also intentionally and in place of the object by perfecting, or preferably, by transforming the potency into the object.
>
> And the reason for this is that the species, among all the other forms, has this special feature, that it informs not only for itself but also as a substitute for another, namely the object; indeed the species is not required for itself but for the sake of the object, by which the potency is perfectly without constituting some nature with it.[47]

Thus, from the fact that the act of knowing is a *real determination* of the knower by which he attains the object, we see that the species must inform the power both entitatively and representationally; and it is plain that the two informations are distinct from one another. Furthermore we must conclude that

[47] ". . . speciem informare dupliciter potentiam, scilicet entitative seu inhaerendo, intentionaliter autem et vice obiecti perficiendo seu potius transformando potentiam in obiectum.

Et ratio est, quia species inter omnes alias formas hoc habet speciale, quod non solum informat pro se, sed vice alterius, scilicet obiecti, imo propter se non requiritur, sed propter obiectum, a quo perficitur potentia sine hoc, quod cum ipso obiecto constituat naturam aliquam." *Cursus Philosophicus, Phil. Nat.*, IV, Q. 6, a. 3, p. 185a, 26-40.

the form of the knowing power is intentional precisely insofar as it represents and not insofar as it inheres in the power. But a few more lines from John of St. Thomas will help determine this point:

> . . . a potency does not use the entity of the species as the specifying principle of its acts; but it is the represented object which is specificative; and a potency must be actuated by its specifying principle inasmuch as it is specifying. Therefore if the potency is not specified by the entity of the species but by the represented object, another union or actuation or determination must occur between the represented object and the potency, and this is said to be an intelligible or intentional union; however, between the potency and the entity of the species there is an accidental union, that is, an inhering of one in the other.[48]

Since the form which specifies an act of knowing is the form as representative, and because the intentional form is the form which specifies, it follows that the intentional as such is representational.

This point can be established in another way, proceeding from the supposition that the substance of an angel serves him as a formal principle of knowledge. The form by which an angel knows is an intentional form, and if his own substance is the form by which he knows, the angel's substance is an intentional form insofar as it is a similitude determining his act of knowledge. In other words, because an intentional form can be *subsisting* as well as *inhering* it is apparent that representation is the formal element of intentionality.

More formally, we can say with Cajetan that it is necessary to distinguish between that which is *per se* and that which is *per accidens* to the intentional form:

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[48] ". . . potentia non utitur entitate speciem tamquam principio specificante actus suos, sed obiecto in ea repraesentato utitur tamquam specificativo, sed potentia debet actuari a suo specificativo, inquantum specificativum est. Ergo si ab entitate speciei non specificatur, bene tamen ab obiecto repraesentato, alia unio seu actuatio aut determinatio debet intercedere inter obiectum repraesentatum et potentiam, et dicitur unio intelligibilis seu intentionalis, inter entitatem vero speciei et potentiam est unio accidentalis, id est inhaerentiae." *Ibid.*, b, 10-25.

The intelligible species of things, about which we are speaking, are not *per se* either substances or accidents; this happens (accidit) to them. Truth demands *per se* of such a species that it be representative of another, not in the mode of a sign (because anything can signify anything), but in the mode of a similitude. Hence the philosophers, as it is said in the first book of the *De Anima*, agree in this, that knowledge is brought about through assimilation. And if knowledge is to be quidditative, it is necessary that the species be similar not only according to the genus, but the ultimate species as well, either formally or eminently. For our soul never knows a house quidditatively unless it has within it a species of 'what it is' to be a house. It is necessary, therefore, that the species by which the thing is seen, be the 'what it is' of that thing; not according to the same natural mode of being of the thing seen but in another mode. This mode, formally taken, abstracts from both substantial and accidental being (esse), as is evident; in addition it must be more noble, or at least as noble, as the nobility of the mode of being of the thing seen; which is evident inductively, and is proved by argument; because the knower as such has a more noble mode of being than the known has in itself, as it terminates knowledge.[49]

As the Cardinal points out, the being of the similitude formally considered abstracts from both accidental and substantial *esse*—both of these are *per accidens* to the similitude as such. An intentional union is precisely one which is *not* of the

[49] ". . . Species quidem rerum, de quibus est sermo, per se quidem non habent quod sint substantiae vel accidentia; sed hoc accidit eis. Verum per se exigit talis species, quod sit repraesentativum alterius, non per modum signi (quoniam quodlibet potest significare quodcumque), sed per modum similitudinis. Unde philosophi, ut in *I de Anima* dicitur, convenerunt in hoc, quod cognitio fit per assimilationem. Et si cognitio debet esse quidditativa, oportet speciem esse similem non solum secundum genus, sed speciem specialissimam, formaliter vel eminenter. Nunquam enim anima nostra domum quidditative novit, nisi apud se speciem domus quae sit *quod quid est domus*, habeat. Oportet igitur speciem qua videnda est res, esse *quod quid* est ipsius rei; non secundum modum essendi naturalem rei visae, sed in alio essendi modo. Qui, formaliter sumptus, et abstrahit ab esse substantiali et accidentali, ut de se patet; et exigit quod sit nobilior, aut saltem aeque nobilis, quam sit nobilitas modi essendi rei visae; ut inductive patet, et ratione probatur; quia cognoscens ut sic, habet nobiliorem essendi modum cognito in seipso, ut cognitionem terminat." *I*, 12, 2, n. vii.

natural, or entitative order. The species is not *intentionally* united to the knower by reasons of its inherence in the intellect. On the contrary, although the species is united to the intellect as an accident to its subject, this union is extrinsic to that union whereby the species informs and is one with the intellect in the representational order. It is precisely this latter unity which is formal to knowledge, and which, because it must be manifested through the medium of the union between matter and form, we are wont to denominate negatively as immaterial. In short, the intentional form as such does not determine the intellect subjectively to the genus and species of that which it (the form) is quidditatively.

Now, although it is accidental to the similitude that its *esse* be substantial or accidental, it nevertheless must be noted that the species is necessarily one or the other of these; for as we have already said, before a thing can represent another it must itself be an entity of some sort.

Briefly, then, the similitude which is the form of an intellect is 1) either inhering or subsisting; is 2) endowed (in either case) with a being of its own in addition to the being of that which it represents; is 3) an intentional form insofar as it is representational. Intentional union, therefore, is in the order of representation.

Now up to this point we have been intent upon distinguishing the natural or entitative being of a species from its intentional being, but it is important to remember that these two aspects are not distinct *in re*. The species is not a composite of intentional and natural being. On the contrary, although they are formally different these two are one in the thing. The intelligible species is both the form of the knower and the form of the known. As form of the knower its being is natural, as form of the known (albeit within the knower) it is intentional, and it is precisely as the latter, that is, as a substitute for the object, that the species is principle of the act of knowing. The natural union

exists only so that the intentional union can occur. It is an indispensable condition of the latter. As John of St. Thomas says, this natural or entitative union must not be considered intelligible (that is, the intelligible union), but "maxime ad intelligendum conducens." [50]

A similar doctrine can be put forward apropos of the power. As an operative potency which is an accident of the knowing substance the intellect's being is natural; as a potential likeness of the object its being is intentional. But as in the species so in the power, the natural being and the intentional being are *one thing.* The intentional being is also entitative *identice seu presuppositive*; [51] the former presupposes the latter *in re.*

Hence, if one identifies the ability of the intellect to *elicit* or *exercise* its operations (insofar as this proceeds from the soul) with the natural or entitative being of the intellect, then it is possible to say that this natural being of the intellect cannot be material, because if it were the operative ability would be limited by the finite form which gave it the power of operation.

Perhaps this is similar to what Cajetan might have had in mind when he proposed the problem in terms of the natural and intentional being of the intellect. On the whole, however, we do not think it contributes very much to the understanding of the doctrine on the immateriality of the intellect.

D. *Some difficulties*

The principal problem which occasioned this essay has now been sufficiently considered, but there are some lesser difficulties which remain, one of which is: how can an intellect know itself if it must lack the nature which it knows?

The solution to this problem depends upon the same doctrine which has already been proposed. When a created intellect knows itself the similitude or form by which it operates is something other than its essence. The angelic intellect, for example,

[50] *Loc. cit.*, p. 185, a 41-45. [51] *Ibid.*, 186, a 10-12.

is an accident, and it knows itself through the essence of the angel, not through its own—the intellect's—essence. Through the substance of the angel the angelic intelligence sees itself as a property following upon that substance. No created power knows itself through itself as the form *by which* it knows (this is on the part of the power).

Perhaps it is also worth noting that when St. Thomas enunciates the proposition, "whatever knows certain things cannot have any of them in its own nature," he is not speaking of the supposit which performs the operation, but of the power by which the supposit operates. This is clear from his own words in some texts [52] but not so evident in others.[53] However, it is manifest that every created supposit has a determined (limited) nature, and the "intus apparens" proposition cannot apply to the substance of the knower. Indeed, if the substance of the creature were also his intellectual power, then no created being would be able to know anything other than himself (adequately), as was said above. The "intus apparens" proposition must be interpreted, therefore, to apply to the proximate principle of operation, the intellectual potency.

There remains as yet one important difficulty to be resolved. In the beginning when posing the problem, an objection from St. Thomas was quoted which he puts forward against the proposition that one angel can know another. We also noted St. Thomas' reply to that objection and remarked that it did not seem to resolve the difficulty. Let us repeat that reply:

> The spiritual natures of the angels are distinguished from one another by a certain order, as was already observed. So the nature of an angel does not hinder him from knowing the other angelic natures, since both the higher and lower have an affinity with his nature, the only difference being according to their diverse degrees of perfection.

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[52] *In III de Anima*, 7, n. 680; *Q. D. de Anima*, 2; *De Unitate Intellectus*, I, 10.

[53] *Summa Theol.*, I, 75, 2; *Quodl.*, X, q. 3, a. 6.

In this text, it must be noted, St. Thomas remarks that the nature of the angel (i. e., his substantial nature) is not an obstacle to his knowing the natures of other angels. St. Thomas here speaks, not of the nature of the *power,* but of the nature of the *supposit.* Now in knowing himself through his own essence the angel is not hindered from knowing the *natures* of other angels for the reason that is given in the above reply, and which is presented at greater length in another place where St. Thomas treats the same question (whether one angel knows another):

> From what others have written, however, it seems that one angel sees another by means of his essence, that is, by means of his own essence. . . . "Just as the mind acquires knowledge of corporeal things through the senses of the body, so it acquires knowledge of incorporeal things through itself."
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> . . . This explanation does not seem to be sufficient, however, for since all knowledge takes place through assimilation, by knowing his own essence one angel would know no more about another angel than that which was similar to his own essence. Now, one angel resembles another only in their common nature. Hence, it would follow that the knowledge one angel would have about another would not be complete; and it would be very incomplete according to the opinon of those who hold that there are many angels in one species. This view, however, might be supported to some extent by those who hold that each angel is specifically different; for, by knowing his own essence, each angel would know perfectly an intellectual nature, and having known this perfectly, he would know all the grades an intellectual nature could have. Now, the different species of angels are distinguished only according to grades of perfection of intellectual nature; consequently, by seeing his own essence, one angel could conceive the individual grades of intellectual nature, and, by means of these conceptions, have complete knowledge of all other angels.
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> In this way, we could save the opinion of those who say that one angel knows another by means of a form he has acquired—if, indeed, the aforementioned conceptions can be called acquired forms. It would be as though whiteness understood itself, and by knowing perfectly the nature of color, knew all species of colors distinctly according to the grades of color, supposing that there were only one member to a species.
>
> But this explanation does not seem sufficient either, because, even

though there is only one angel in every species, nevertheless, in any particular angel there will be a difference between what belongs to him by reason of his species and what belongs to him as an individual, for example his own particular operations. According to the above theory, these special operations could in no way be known by another angel. Moreover, the words of Augustine do not mean that a mind can know other things through itself as through a medium, but as through a knowing power; for thus it knows corporeal things through the senses.[54]

There is a limit to what one angel can know of another through his own substance, but nevertheless St. Thomas admits that because the natures of angels differ only as grades of

[54] "Ex aliorum autem dictis videtur quod angelus per essentiam suam, id est videntis, alium angelum videat. . . . '*Mens ipsa sicut corporearum rerum notitias per corporis sensus colligit, ita et incorporearum per semetipsam. . . .*'

"Sed istud non videtur sufficere: quia, cum omnis cognitio sit per assimilationem, angelus per essentiam non potest plus de alio angelo cognoscere quam hoc in quo essentiae est similis. Unus autem angelus alteri non similatur nisi in natura communi: et sic sequeretur quod unus alium non cognosceret cognitione completa, et praecipue quantum ad illos qui ponunt plures angelos esse unius speciei.

"Quantum enim ad illos qui ponunt plures angelos specie ab invicem differe, forte posset aliquo modo sustineri modus iste. Quilibet enim angelus cognoscendo essentiam suam, cognoscit perfecte intellectualem naturam. Cognita autem natura intellectuali perfecte, cognoscuntur omnes gradus naturae intellectualis. Diversae autem species in angelis non distinguuntur nisi secundum gradus perfectionis intellectualis naturae. Et secundum gradus naturae intellectualis, et per huiusmodi conceptiones de omnibus aliis angelis cognitionem completam habet.

"Et sic potest salvari quod quidam alii dicunt, quod unus cognoscit alium per formam acquisitam, ut praedicta conceptio forma acquisita dicatur; sicut si albedo seipsam intelligeret, perfecte cognosceret naturam coloris, et per consequens omnes species colorum secundum gradus colorum distincte, et ulterius etiam omnes individuos colores, si in una specie non esset nisi unum individuum.

"Sed adhuc hic modus non videtur sufficere. Quamvis enim in una speciei non sit nisi unus angelus, tamen in angelo alicuius speciei aliud erit quod ei conveniet ex ratione suae speciei, et aliud quod ei conveniet inquantum est quoddam individuum, sicut operationes particulares ipsius; et has secundum modum praedictum nullo modo de eo alius angelus cognoscere posset. Auctoritas autem Augustini . . . non sonat quod mens per seipsam sicut per medium cognoscendi cognoscat alia, sed sicut per potentiam cognoscitivam: sic enim per sensus corporalia cognoscit." *De Ver.*, VIII, 7.

perfection within the order of intellectual natures, in knowing his own essence one angel can know adequately the *natures* of other angels. However, such knowledge does not constitute an exception to the "intus apparens" proposition in St. Thomas' mind for the evident reason that in this instance the similitude is sufficiently proportioned to the object known; the object does not transcend the genus of the form by which it is known. Therefore, according to this position St. Thomas can say that because of the likeness or affinity between the separated substances the substance of one angel is an aid in his knowing other such natures.

E. *Summary*

In conclusion, it may be well to summarize the argument which has been presented. No created intellect can be *in act* the nature of any one of the things it can know, because if some finite nature were connatural to it, the knowing power would be limited to some genus or species, and at the same time it would be prevented from receiving other forms (except those within its formality). And since every operative potency which is a composite of matter and form is intrinsically finite or determined because of the finite character of the form through which it is constituted as an operative power, and because such a power or potency must therefore be ordered to some determined or limited genus of object, it follows that no corporeal potency can be ordered to being universally; consequently no corporeal power can be an intellect. Only a potency which is simple, which is not a composite of matter and form (and which is not matter itself), can be undetermined. And since only a power rooted solely in form and therefore uncomposed can be a potency of this sort, it is evident that the intellect must be in itself, as operative, rooted solely in form and thereby entirely independent of matter.

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Depth Psychology and the Contribution of Existential Synthesis

by Ramon A. di Nardo

THE SO-CALLED decline of philosophy, which began a few centuries ago, was accompanied by a corresponding exaltation of exactness in the empirical sciences. Knowledge for its own sake lost favor, and the ambition of scholars was to discover the "basic forms" of natural bodies and forces, in order to control and master the laws of nature for the benefit of mankind. Thus, the emphasis shifted from speculative knowledge to practical and utilitarian knowledge.

In order to acquire exactness in knowledge a suitable method was required, and hence the scientific movement concerned itself as much with method as with knowledge. Methods and "philosophies" become confused, and oftentimes it is method that is given priority over knowledge. Whatever does not fit in with the accepted method is discarded as false, or at least useless, knowledge. The overemphasis upon method thus defeats the very purpose of its existence, and methodology becomes a hindrance to the discovery of further and more comprehensive knowledge. The bias inherent in such an approach must necessarily exclude wide and significant areas of knowledge which do not readily lend themselves to any particular method.

Scientific method early focused its attention on man, since man was considered to be of central significance because of the relationship of all sciences to him.[1] This anthropocentric attitude is characteristic of the concept of empirical science, which

[1] D. Hume, *Treatise of Human Nature*, Selby-Biggs Edition (Oxford, 1941) p. xix: ". . . All sciences have a relation, greater or less, to human nature; and that however wide any of them may seem to run from it, they still return back by one passage or another. Even Mathematics, Natural Philosophy, and Natural Religion, are in some measure dependent on the

frequently takes the form of what Gilson has called " psychologism " which, he says, " consists in demanding that psychology answer philosophical questions. Psychology is a science, psychologism is a sophism; it substitutes the definition for the defined, the description for the described, the map for the country." [2] As the center of interest, man becomes in a sense absolute, and the objective and ontological hierarchy of values is seen only in relation to man.

The distorted perspective involved here has been called " the heresy of life " in that it is an absolutization of the relative.[3] Certainly there is a place for the empirical method in science, but there are also hazards inherent in the application of the methods of mathematics and physics to man, for man is not an object in the same sense that measurable and quantifiable reality is the object of these sciences. What makes man specifically human is his rationality by which he can know what is good and freely choose to do it. Intention and appreciation of spiritual values are entirely outside the competence of mere physical science; in particular, freedom of choice is something more than a statistical average. The scientific method as commonly understood can reach only a partial and distorted conclusion when applied to man,[4] for it" proceeds by analysis and seeks to reduce all phenomena to certain ultimate

science of Man; since they lie under the cognizance of man, and are judged of by their powers and faculties."

[2] E. Gilson, *The Unity of Philosophical Experience* (New York, 1956) p. 90.

[3] I. Caruso, *Psychoanalyse und Synthese der Existenz* (Freiburg, 1952) p. 59: " Statt dass das Ich den ihm zukommenden Platz in einem universellen Bezugssystem einnimmt, macht es sich zum Mittelpunkt der Welt. Das Individuum als höchster Eigenwert muss aber fatalerweise ein Weltsystem aufbauen, in welchem die Gesetzlichkeit von seinen immanenten Empfindungen diktiert wird. Die Hypertrophie des Ich kommt einer Verabsolutierung der relativen Werte gleich. Sie ist also eine Lebenshäresie."

[4] H. Baruk, *Psychiatrie Morale Expérimentale, Individuelle et Sociale* (Paris, 1950) p. 268-269: " La méthode scientifique étant un type de méthode partielle, ne voit successivement qu'un aspect isolé des problèmes. . . . Aussi, tant que les diverses phases scientifiques ne seront pas achevées,

basic elements assumed to be constant and immutable, comparable to the atoms. . . ." [5]

In this atmosphere psychology began its existence as an autonomous science distinct from philosophy, and it took the form of a physiology and a psychophysics. Wilhelm Wundt, who has been called "the senior psychologist in the history of psychology," [6] fell heir to this heritage, and while his school was characterized by its interest in consciousness, it was only insofar as its physical manifestations were measurable. This tradition prevailed and still exists in contemporary psychology.

Even as an autonomous science psychology remains somewhat indeterminate, lending itself to a variety of adaptations and emphases. The philosophical approach has never died, and indeed in some areas of investigation it has remained quite vigorous. Where methods of research have ignored or rejected philosophical principles, at least an implied or concealed philosophy has always remained. The method of controlled experiment was a reaction against the rational approach, yet it in turn has met with opposition particularly from the depth psychologies that emerged early in the history of psychology. Soon it was discovered that laboratory studies of consciousness provided only a partial view of man,[7] for out of the clinic there came evidence of a dynamic unconscious which was to have a

l'humanité est exposée aux conséquences pénibles des systèmes partiels. Elle ne pourra retrouver son équilibre que lorsqu'elle sera parvenue au stade de synthèse, où elle saura associer heureusement avec les données biologiques, sociologiques et morales."

[6] R. Allers, "The Role of Personal Belief," *Faith, Reason, and Modern Psychiatry*, edited by Francis J. Braceland (New York, 1955) p. 42.

[6] E. Boring, *A History of Experimental Psychology* (New York, 1950) p. 316.

[7] Caruso, *op. cit.*, p. 11: "Der Mensch der experimentellen Psychologie ward zu einem Automaten, dessen Reaktionen sehr sorgfältig gemessen wurden, dessen Seele aber dem Fachpsychologen viel weniger bekannt war, als etwa dem Medizinmann eines Negerstammes. . . . Eines der krassesten Vorurteile der alten Psychologie war die Verwechselung der Psyche mit dem Bewusstsein Einerseits, deren Zurückführung auf das physiologische Korrelat anderseits."

tremendously important significance for the understanding of human behavior.

Psychoanalysis represents a shift of emphasis in the direction of unconscious psychic activity, and although it has accomplished much in the restoration of unity to the human organism, it nevertheless remains inadequate. As a method it is analytical, segmental, and reductionistic, for it reduces all human behavior to its simplest common denominator, which in the Freudian system, turns out to be biological instinct. There were immediate reactions to the Freudian revolution. Alfred Adler socialized the depth psychology of Freud by setting up a system of social adaptation in opposition to Freud's immanentism. Carl Gustav Jung concerned himself with the primordial depth of the soul where the archaic experiences of the entire human race were stored. Otto Rank, the fourth pioneer in psychoanalysis, came ultimately to interpret human behavior in terms of "will to immortality."

> After Rank, psychology enters a new period. It is not that he single-handedly changed the direction of psychological work; for he did not. The works of the other three, Freud, Adler, and Jung are integral parts of the transformation of psychology. Rank's special significance derives from the fact that he carried the insights of the others far toward their logical conclusions. . . . With Rank, depth psychology finally became capable of understanding itself in perspective. It could see its transitional role in history, and it could perceive that the fundamental problems of psychology are intimately connected with man's search for a meaning in life. Freud had a vision of this, blurred but growing stronger in his later years. Adler and Jung saw it more sharply, each with increasing depth. Rank, however, brought the implications fully into the open where they could be faced squarely beyond all unconscious hedging.[8]

The culmination of the analytical phase of depth psychology is the conclusion that the new science of man must look "beyond

[8] I. Progoff, *The Death and Rebirth of Psychology* (New York, 1956) p. 258.

psychology"[9] if it is to provide modern man with a meaning for his life. The new psychology must treat of man as a substantial unity of great psychological depth and spiritual magnitude; it must re-establish him in proper relationship to an objective hierarchy of values; and in particular it must look with reverence upon his supernatural destiny and his relationship to God.

Modern man finds himself involved in an anxiety crisis, and he receives small comfort from psychologies that have alienated him from himself by reducing him to mere instinctual urges, response to environmental stimuli, reflex arcs, stream of consciousness, chemical action, or statistical norms. These academic gestures are far removed from the contingent, threatening situation of man's personal existence. Joseph Nuttin has expressed the contemporary psychological and existential problem as follows:

> At a time like ours, when the various attachments to past and future, to the earth and the family—when the thousand and one things to which existence attaches itself, and which give existence its meaning and value —have been dissolved, man feels utterly 'uprooted.' The need to find some absolute meaning in life, i. e., the need to become integrated with existence, makes itself felt more and more imperiously. But this need has gone on being frustrated: man has continued to see before him nothing but the horror and emptiness of his isolation and the absurdity of his existence. It is a situation which brings out more clearly than ever the *reality* of man's spiritual needs—and it is amazing to find so many contemporary psychologies incapable of seeing this and giving all their attention to mere 'tissue needs' instead.[10]

The outlook, however, is optimistic since new spiritual direction is being given to psychoanalysis by scholars whose approach is at the same time existential, personalistic, and comprehensive. The following names are significant in this movement: V. E. von Gebsattel, W. Daim, C. Baudoin, E.

[9] Cf. O. Rank, *Beyond Psychology* (Camden, N. J., 1941).

[10] *Psychanalyse et conception spiritualiste de l'homme* (Louvain, 1955) p. 277.

Meng, G. H. Graber, H. Baruk, A. Kraus, V. von Weisaecker, H. Schultz-Hencke, A. Niedermeyer, J. J. López Ibor, V. Frankl, and I. Caruso. The teaching of these men stands out as a challenge to the systematic materialism of classical psychoanalysis which looks upon the soul as mere psychic energy. With regard to belief in God, Freud asserted that the notion of divinity was a sublimation of the libido instinct, and Jung considered God to be an innate quality in the soul, an "archetype," a mere symbol from out of the collective unconscious, and which was indifferent to objective existence. Existential depth psychology has something refreshing to say on these matters, and it appears that the definition of man as *homo sapiens,* having made way for later concepts of *homo psychologicus* and *homo libidinosus,* must now give place to *homo religiosus* as the true definition.

Viktor Frankl postulates a three dimensional life of man as somatic, mental, and spiritual. All three aspects must be taken together as constitutive parts of the integral person, but primary importance must be given to the spiritual since spirit is what makes man specifically human.

> Psychoanalysis speaks of the *pleasure principle,* individual psychology of status drive. The pleasure principle might be termed the *will-to-pleasure*: the status drive is equivalent to the *will-to-power.* But where do we hear of that which most deeply inspires men; where is the innate desire to give as much meaning as possible to one's life, to actualize as many values as possible—what I should like to call the *will-to-meaning*? This will-to-meaning is the most human phenomenon of all, since an animal certainly never worries about the meaning of its existence. . . . Again and again we have seen that an appeal to continue life, to survive the most unfavorable conditions, can be made only when such survival appears to have a meaning. That meaning must be specific and personal, a meaning which can be realized by this one person alone. For we must never forget that every man is unique in the universe.[11]

A person puts meaning into his life through the realization of three kinds of values: creative values, i. e., in achieving tasks;

[11] V. Frankl, *The Doctor and the Soul* (New York, 1955) p. x.

experimental values, through experiencing the good, the true, and the beautiful; and attitudinal values, which one may realize even in great distress, for it is specifically in his attitude toward suffering that man enjoys the highest achievement that can be granted to him.[12] The basic elements in the existential analysis or logotherapy of Frankl are the meaning of existence, the value of life, and personal duties and responsibilities. "Man's being consists of being conscious and being responsible. His responsibility is always responsibility for the actualization of values." [13] Frankl shows how "both psychoanalysis and individual psychology err in that each sees only one aspect of humanity, one factor of human existence—whereas the two aspects must be taken jointly to yield the true picture of man." [14] Consciousness and responsibility are specifically human qualities and these are united as entity in the integrity of the human person. Psychotherapy, which tended to consider man "from below," must now consider him "from above," and "logotherapy must supplement psychotherapy." [15]

Psychotherapy was born when the attempt was first made to look behind physical symptoms for their psychic causes—to discover, in other words, their psychogenesis. Now, however, a further step must be taken: we must look beyond psychogenesis, past the affect-dynamics of neurosis, in order to see the distress of the human spirit—and to try to alleviate this distress.[16]

This consideration of Frankl's doctrine suffices for an indication of the new spiritual direction that must form an essential part of psychotherapy. In this movement, special recognition must be given also to the work of H. Baruk whose researches have produced significant clinical and experimental evidence to demonstrate the fact that the study of humanity is a special field of investigation having its own proper laws. His work is convincing evidence of the invalidity of applying atomistic methods

[12] *Ibid.*, p. xii.
[13] *Ibid.*, p. 121.
[14] *Ibid.*, p. 5.
[15] *Ibid.*, p. 20.
[16] *Ibid.*, p. 12.

to the study of man, for man is a reality who does not correspond univocally to laws governing other elements of the cosmos. Man is a special entity whose life process is a function of unity and synthesis.

From the moment when one attempts to dissociate this unity and this synthesis through fragmentation, humanity is destroyed, or rather it is broken up into different fragments that are totally devoid of any human quality. This is why analytic and dissociative science is fatal to humanity. A science of man must consider him in his unity and experimentally study the laws governing his own reactions.[17]

The concept of the science of man differs from that of other contemporary sciences in its specifically synthesizing character, for it does not limit itself to partial analysis and is committed to a comprehension of the "totality of the human personality in action."[18] The data of related analytical sciences must be incorporated into this "new" approach.

But all the methods we utilize ultimately must never lose sight of the fact that, along with psychic mechanisms, instincts, and characterological tendencies, there exists also a profound and hidden factor, related to judgment of good and evil, a factor of extraordinary depth and power which regulates conduct and confers its specific character on the human personality, and which, depending on whether it is followed or disregarded, grants either peace or moral suffering to individuals and society alike. . . .[19]

Mention should also be made of Albert Niedermeyer who has added his own valuable contribution to this movement through his synthesis of a "universalist anthropology and psycho-

[17] Baruk, *op. cit.*, p. xiv: "Dès que l'on veut dissocier cette unité et cette synthèse par des fragmentations, on tue l'humanité, ou plutôt on la découpe en fragments différents totalement vidés de leur caractère humain. C'est pourquoi la science analytique et dissociative est mortelle pour l'humanité. La science de l'homme doit prendre l'homme dans son unité et étudier expérimentalement les lois de ses réactions."

[18] *Ibid.*, p. 9.

[19] *Ibid.*, p. 10: "Mais toutes ces méthodes que nous utilisons longuement ne doive pas faire perdre de vue qu'à côté des mécanismes psychologiques, des instincts, des tendances caractérielles, il existe un facteur profond et

therapy" that integrates all the sciences of man and in particular those of medicine, depth psychology, and religion.[20] Whereas, Frankl has expressed his opinion concerning the relation of psychotherapy and religion in his doctrine of the "medical direction of conscience" (*ärtzliche Seelsorge*), Niedermeyer's belief in the validity of this relationship is contained in his concept of "medical assistance to the direction of conscience" (*Seelsorgehilfe*).

It would be to our advantage to pass on now to consider in special detail the teaching of Igor Caruso, whose doctrine of "existential analysis and synthesis" represents a typical and rather comprehensive formulation of the spirit animating this whole movement. Caruso has taken advantage of the contribution of other members of this school. He has also drawn from traditional Judeo-Christian theology and Aristotelian-Thomistic philosophy, and on the basis of his own clinical experiences has placed all this in the new framework of a personalistic depth psychology.[21]

A concise synopsis of the theory underlying Caruso's "existential synthesis" is to be found in the 1950 issue of "Cahiers Laënnec."[22] Caruso deplores the "psychophobia" of those who cling to the pretense of objectivity in the exact sciences, and designate our times as an "age of neurosis" because of our unwillingness to believe what cannot be "objectively" proven. The positivistic attitude in science has caused humanity "to

caché, relatif au jugement du bien et du mal, facteur régulateur de la conduite, d'une puissance et d'une profondeur extraordinaire, qui confère à la personalité humaine son caractère specifique et qui, suivant qu'il est suivi ou tourné, donne aux sociétés, soit la paix, soit la souffrance morale. . . ."

[20] A. Niedermeyer, *Handbuch der Speziellen Pastoralmedizin* (Vienna, 1952-1953).

[21] C. Fabro, "Presentazione" in the Italian edition of Igor Caruso, *Psicanalisi a Sintesi dell 'Esistenza.* Translated by Giovanni Maria Merlo (Turin, 1953).

[22] I. Caruso, "Psychothérapie et valeurs de l'existence," *Psychanalyse et conscience morale* (Paris, 1950) p. 7.

lose the certitude and the assurance that come from faith, and herein perhaps lies the reason for the contemporary crisis, or at least for the spiritual uprooting, which has made psychotherapy so necessary." [23]

The tendency of psychology toward a narrow "scientism" is characterized by a causal determinism which deprives man of a holistic knowledge of himself, and this causes him also to lose his perspective with regard to authentic objectivity. The atomization of man has alienated him from himself, inverted the objective and absolute hierarchy of values, and led him to a condition of "hypertrophy of the Ego" which makes individual and subjective feeling absolute. "Herein lies the tragedy of every Promethean adventure: *eritis sicut Deus.*" [24]

The inversion of the objective, ontological order of being, the "absolutizing of the relative," constitutes the "heresy of life," and man's unwillingness to take his proper place in the objective hierarchy of values is the *non serviam* of the fallen angels and of our first parents. Adherence to the "heresy of life" involves an "existential lie" that gives rise to a bad conscience charged with neurotic guilt and consequent anxiety.[25]

In the application of his theory to neurosis, Caruso says that "The cause of neurotic disturbances of conscience is always the repression of infantile conflicts. In adults the psychological-

[23] *Ibid.*, p. 75: "L'humanité semble avoir perdu la certitude et l'assurance qui proviennent de la foi, et c'est peut-être là l'une des raisons de la crise contemporaine, et, en tout cas, de ce déracinement spirituel, qui a necessité la psychothérapie."

[24] *Ibid.*, p. 76.

[25] I. Caruso, *Phychoanalyse und Synthese der Existenz* (Freiburg, 1952) p. 8: "Bald wurden aber nicht nur die Beziehungen zu den Werten, sondern die Werte selbst immanentisiert, d. h. der Mensch war der Meinung, dass nicht seine Stellung von der Hierarchie objektiver Werte abhängig sei, sondern die Werte von ihm. So wurde der Mensch aus einem werterkennenden Wesen zu einem wertbestimmenden Wesen. Die Weltordnung wurde nunmehr also von seiner Entscheidung order von der Nützlichkeit, und nicht von einer objektiven Wahrheit abhängig. Die Immanentisierung der Werte führte selbstverständlich zum Verweigern des Gehorsams, zu einem *non serviam*."

ly intolerable burden was for sometime repressed into unconsciousness. A guilty conscience then manifested itself obliquely, i. e., in symbolic language, and produced symptoms difficult to decipher." [26] After citing various cases, he concludes: "We see that the painful symptom of neurosis is inflicted by way of self-punishment. Self-punishment is supposed to expiate guilt, but the guilt is not consciously admitted, so that it is displaced elsewhere. Thus the guilty conscience causes the neurotic to punish himself or others." [27] Neurotic guilt, once it is brought out into the light, does not appear to constitute the real guilt of the neurosis. Caruso says,

> On the contrary, neurotic sentiments of guilt (feelings of inferiority, self-accusation, scruples, and many others) are often a screen that permits the carrying out of a false localization of guilt. . . . Not all guilt leads to neurosis, but only an unadmitted guilt that is still feared. . . .[28] The neurotic localizes his guilt poorly because of a lack of humility, for pride will not let us admit that we are guilty, and it feels more comfortable to repress even a false guilt.[29]

Borrowing the expression "scapegoat mechanism" from Baruk,[30] Caruso uses it to explain the "neurotic displacement of guilt," or the "false localization of guilt."

[26] *Ibid.*, p. 48: "So ist die Ursache neurotischer Gewissensstörungen immer die Unterdrückung der kindlichen Konflikte. Beim Erwachsenen ist die seelisch unerträgliche Belastung seit langem ins Unbewusste verdrängt. Das böse Gewissen meldet sich auf Umwegen in einer sozusagen symbolischen Sprache und bringt so schwer zu entziffernde Symptome hervor."

[27] *Ibid.*, p. 50: "In diesen Fällen sowie in zahlreichen anderen sehen wir, dass das peinliche Symptom der Neurose als Selbststrafe auferlagt wird. Die Selbstbestrafung soll die Schuld sühnen, die Schuld aber wird nicht zur Kenntnis genommen und gar auf andere verlegt. Das böse Gewissen veranlasst den Neurotiker, sich selbst oder die anderen zu strafen."

[28] *Ibid.*, p. 52: "Im Gegenteil, die neurotischen Schuldgefühle (Minderwertigkeitsgefühle, Selbstvorwürfe, Skrupel u. dgl. m.) sind oft eine Tarnung, welche erlauben soll, die 'falsche Lokalisation' durchzuführen. . . . Nicht jede Schuld führt zur Neurose, sondern die uneingestandene und doch gefürchtete Schuld."

[29] *Ibid.*, p. 56: ". . . Die Neurose lokalisiert die Schuld aus Mangel an Demut falsch, da die Hoffart nicht zugibt, dass wir schuldig sind, sondern es als bequemer erachtet, sich sogar eine falsche Schuld aufzuerlegen."

[30] Baruk, *op. cit.*, p. 272.

The neurotic person punishes himself through a guilt which he has carefully repressed into unconsciousness, and in order to account for his feeling of guilt he goes in search of a scapegoat. . . . This expression seems quite appropriate, because it also describes the 'false localization of guilt' in the incidence of neurosis. However, by the 'scapegoat complex' we do not mean primarily the projection of unexpiated guilt elsewhere, but rather the concealment of proper guilt along with the search for a scapegoat within one's psyche. 'False localization' necessarily leads on to apparent self-accusation, and secondarily to aggressivity.[31]

There are two phases in the therapy of Caruso's personalistic depth psychology, namely the negative, which is called the "analytical unmasking," and the positive, which is the "existential synthesis." [32] The negative aspect of neurosis is the process of making absolute what should be relative, and this involves the existential lie, the scapegoat mechanism, the heresy of life, and the *solus ipse,* or apotheosis of self. The positive aspect involves a certain sense of the Absolute, and the particular optimism of Caruso is his conviction that neurosis, in spite of its appearance of disintegration, is basically an attempt on the part of the individual to solve his existential problem in the most hidden depths of his soul.

Caruso has shown that the essence of neurosis consists precisely in the substitution of absolute values for values that are

[31] *Ibid.*, pp. 56-57: "Der Neurotiker bestraft sich für eine Schuld, welche er sorgfältig in das Unbewusste verdrängt hat, und um sein Schuldgefühl nunmehr erklären zu können, ist er auf der Suche nach einem Sündenbock. . . . Das Wort scheint uns adäquat genug zu sein, um dasselbe auch bei der Beschreibung der 'falschen Lokalisation der Schuld' in der Entstehung der Neurose zu gebrauchen; wir verstehen aber unter 'Sündenbockkomplex' nicht primär eine Projektion seiner unerledigten Schuld auf die Umwelt, sondern überhaupt die Verdeckung der eigenen Schuld, wobei man einen 'Sündenbock' in seinem eigenen Psychismus suchen kann; die 'falsche Lokalisation' führt notwendigerweise zu einer scheinbaren Selbstbeschuldigung und sekundär zur Aggressivität."

[32] Caruso, *op. cit.*, "Cahiers Laënnec," p. 86: "Les deux aspect,—le 'démasquement analytique' et la 'synthèse existentielle'—doive se retrouver dans toute psychothérapie, même la plus courte. Sans analyse, sans

only relative.[33] Hence, there can be no solution to the problem of neurosis without some reference to metaphysical values that transcend the biological. Every neurosis is ambivalent in character, so that although a neurotic conflict may seem to be entirely on the biological level, indications are that the ultimate solution will be worked out on a higher level.[34] The neurosis is evidence of a call to a higher order of life, even perhaps to that of a "tragic existence" in somewhat the same sense in which Job was called.[35] In any case, neurosis, in its positive aspect, is an indication of an invitation to a more meaningful life. The individual does not recognize this calling, for once the objective order of values is confounded, he sees meaning only in what is pleasurable to himself.

In Caruso's psychology, conscience is what makes man specifically human, and conscience is the dynamic force that continues to operate even though the individual may possess a distorted system of values. Conscience is the integrative force striving to re-establish order and restore the neurotic to a state of original innocence.[36] There is at the same time a desire to love in one who has forgotten how to love, an invitation to transcendance, a sense of the absolute, and a longing for the

la pénétration dans les 'sous-sols' cachés de la personne, la synthèse restait abstraction au lieu de devenir une vérité vécue."

[33] *Psychoanalyse und Synthese der Existenz*, K. II.

[34] *Op. cit.*, p. 83: "Nun haben wir uns dem positiven Aspekt der Neurose zugewandt. . . . Man kann ruhig behaupten, dass jeder seelische Inhalt in der Neurose ambivalent ist und für die Doppeldeutigkeit der menschlichen Beweggründe beredtes Zeugnis ablegt. . . . Diese Terminologie soll vielmehr besagen, dass die Neurose im Menschenschicksal sowohl eine zutiefst zerrüttende Funktion ausübt, als auch diesem Schicksal die Pflicht zu einer neuen und freien Gestaltung auferlegt: die Neurose ist zugleich Verrat an der Berufung und eherne Bestätigung des Berufenseins."

[35] *Ibid.*, p. 94: "Seine Berufung könnte im Gegenteil eine Berufung zur *tragischen Existenz* gennant werden. Und gegen diese Berufung sträubt er sich. Diese Berufung will er nicht anerkennen, so wie es übrigens ein Mann gemacht hat, der ein Mann Gottes war und doch im Streit mit seinen Gott lag: der Mann Hiob."

[36] *Ibid.*, p. 102: "Die Verdrängung der Schuld durch den Neurotiker und deren falsche Lokalisation bedeutet den Versuch, jene paradiesische Un-

Redeemer. In the dialectic of neurosis, conscience cries out for a conversion, a *metanoia,* and psychotherapy must assist in the achievement of this conversion.[87]

Personalistic depth psychology proceeds by analysis and synthesis, and seeks in its therapy to unmask the falsity disturbing the neurotic, in order to enable him to function harmoniously in the totality of his being as an integrated personality existing in ultimate and transcendent relationships to the things of nature, to himself, to his fellow-man, and to God. This is the concept of man in proper perspective as it is presented to us in Caruso's "analysis and existential synthesis." Its theory, method, and technique rest upon a true and comprehensive concept of the human person, and therefore this type of psychotherapy holds great promise for the effective benefit of humanity. Other anthropological theories, and therapies based on them, are inadequate to the extent that they either ignore the true and total nature of the human person or build on a hypothesis that is false or partial. Man is a miscrocosm constituted of apparently contradictory elements, and this fact presents many hazards to anthropological scientists who feel constrained to force man into a system, valid in certain areas of investigation, but inadequate when applied to man. Caruso avoids the hazards inherent in tyrannical and narrow "nothing but" methods by starting off with a true concept of man as given in experience and by supplementing his analysis with an existential synthesis. The begin-

schuld wiederherzustellen, wie sie ursprünglich herrschte, ehe die ethische Erkenntnis einsetzte."

[87] *Ibid.*, p. 148: "Und wenn man schon erkannt hat, was so manche moderne Psychotherapeuten erkannt haben, dass jede Neurose ein geistiges Problem darstellt, wenn man erkannt hat, dass dieses geistige Problem in einem Abfall vom Absoluten liegt, so muss man konsequenterweise auch sagen, das die pädagogische Aufgabe der Psychotherapie, wie jede pädagogische Aufgabe schlechthin, nur von Religiösen her zu lösen ist. Es war also kein Zufall, dass jahrtausendelang die Psychotherapie in den Händen des Priesters lag. . . . Aber da sie schon ein geistiges, ja, religöses Problem darstellt, so ist der Psychotherapeut selbst bloss vertretender Assistent des Seelsorgers. . . . Soll ja auch die ärztliche Psychotherapie eine Vorbereitung zur *Metanoïa* sein."

ning and end of a competent science of man is the comprehensive grasp of the true and existential nature of human personality, and Caruso has understood it well. In the conclusion of his book he says:

> What is peculiar to man is not the psychophysical, and it is not even spirit. The specifically peculiar thing about man is the incarnation of spirit: the incarnation of spirit and the spiritualization of flesh. The solution to the central problem of anthropology—the problem, namely, of conscience as the proper characteristic of man—must be sought in a recognition of the intimate and indivisible union of spirit with matter. Conscience is man's capacity of calling to mind a hierarchy of values that do not have their origin in laws of the flesh. Thereby conscience testifies to the incarnation of the spirit. Hence, it is man's pivotal characteristic, and any knowledge about man without a knowledge of his conscience is only apparent knowledge. Man's personal responsibility and imputability are consequent upon a recognition of conscience.[38]

Through an analysis of the human problems constituting neurotic conflict, the personalistic depth psychologist must unmask the pseudo solution of those problems. By supplementing this unmasking with an existential synthesis of basic values concealed in the depths of every human soul, he must effect a conversion that is a preparation for more meaningful and transcendent existence.

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[38] *Ibid.*, pp. 229-230: "Nicht die Psychophysik, aber auch nicht der Geist sind das eigentlich Menschliche. Eigentlich menschlich ist die Inkarnation des Geistes: die Fleischwerdung des Geistes und die Vergeistigung des Fleisches. In der Anerkennung der intimen und unzertrennbaren Vereinigung des Geistes mit der Materie ist die Lösung des zentralen Problems der Anthropologie—des Gewissens als eigentlichem Merkmal des Menschen—zu suchen. Das Gewissen ist die Fähigkeit des Menschen, auch auf eine Wertehierarchie zu besinnen, die nicht den Gesetzen des Fleisches entstand. Dadurch is das Gewissen ein Zeugnis für die Inkarnation des Geistes. Es ist also das zentrale Mermal des Menschen, und ein Wissen über den Menschen ohne Wissen über sein Gewissen ist ein scheinbares. Doch folgt aus der Anerkennung des Gewissens auch die persönliche Verantwortung, die Imputabilität des Menschen."

Aristotle's Sluggish Earth
Part II: Media of Demonstration

by Benedict M. Ashley, O. P.

IN A PREVIOUS article I have considered the kind of problems raised by Aristotle about the nature of the universe in his treatise *De Caelo*.[1] It was indicated that this problematics was rooted in Aristotle's intention to build a strictly physical-causal science of the world. At the same time he recognized the legitimacy of problems of a mathematical-physical type, but considered that such questions pertained not to the heart of the science of nature, but to its dialectical or investigative procedures. The Galilean revolution in science consisted in treating such problems as capable of independent solution and as being the only fruitful ones. The Galileans were confirmed in their conviction by the apparent failure of Aristotle to find firm answers to the problems which he had raised. If the Stagirite could not answer such questions wisely, should they even be asked?[2]

In the present article I will inquire as to the reason that Aristotle seemed to fail. Did he ask unanswerable questions?

[1] Part I:: "Problematics of the *De Caelo*," THE NEW SCHOLASTICISM, XXXII (1958) 1-31.

[2] "SALVIATI: The present does not seem to be the proper time to investigate the cause of the acceleration of natural motion, concerning which various opinions have been expressed by various philosophers, some explaining it by attraction to the center, others by repulsion between the very small parts of the body, while still others attribute it to a certain stress in the surrounding medium which closes in behind the falling body and drives it from one of its positions to another. Now, all these fantasies, and others too, ought to be examined; but it is not really worth while. At present it is the purpose of our Author merely to investigate and to demonstrate some of the properties of accelerated motion (whatever the cause of this acceleration may be). . . ." (Galileo, *Dialogues Concerning Two New Sciences*, tr. H. Crew and A. De Salvio [Evanston, 1946] p. 160.)

Did he pursue the wrong method in seeking their answer? Or did he, like every scientist, succeed in part and fail in part?

1. Mathematical Arguments

We will consider these first since they play only a subsidiary (although far from negligible) role in Aristotle's treatise. Examples of all the uses of mathematics discussed in my previous article can be found here.

A. *Strictly demonstrative mathematico-physical arguments.*

It has been pointed out that Aristotle held that the application of mathematical reasoning to physical problems can be truly demonstrative when based on a quantity known to be a genuine *property* of a certain kind of body. The classical example of such an argument is the proof of the sphericity of the earth through the fact that it always casts a circular shadow in lunar eclipses no matter at what position it passes the moon.[3] Even the physical argument for the same conclusion through the gravitational tendency of the earth involves mathematical principles, namely that only a sphere has a surface at all points equidistant from its center.[4]

Similar to these arguments is the proof that the moon is a sphere because of the figures which it exhibits in waxing and waning,[5] and also the argument for the sphericity of the earth from the change in the altitude of the stars as the observer moves north or south on the earth's surface.[6]

Other examples are the proofs that an infinite sphere could not move since this would require infinite time,[7] and that no body but a sphere can move in an absolute sense in its own space.[8]

[3] *De Caelo* II, 14, 297b 24-31; *Post. Anal.*, II, 1, 90a 3 ff.; 8, 93a 29 ff., etc.
[4] *De Caelo* II, 14, 297a 8 ff.
[5] *Ibid.*, 11, 291b 19 ff.
[6] *Ibid.*, 14, 297b 32 ff.
[7] *Ibid.*, I, 5, 271b 27 ff.
[8] *Ibid.*, II, 4, 287a 11 ff.

In each of these arguments the middle term of the proof is mathematical in character, but one premise is not a proposition established in mathematics, but in physics. Thus the proof for the sphericity of the earth can be formulated:

A solid whose projection in all orientations on a surface is always circular	is	a sphere.
The earth	is	a solid whose projection (shadow) in all orientations on the surface (of the moon) is always circular.
Therefore, the earth	is	a sphere.

According to the rules of the *Posterior Analytics*[9] such a demonstration should be classified as *a posteriori* because it is through an effect (the shadow). This middle term is a mathematical-physical one, since it is taken in a mathematical sense in the major premise and in an applied or physical sense in the minor. The major premise is a theorem demonstrable in mathematics, but the minor premise is verifiable only in a strictly physical manner, that is by reference to sense observation. In order that the demonstration be apodictic one must be sure that a circular shadow is a genuine property of the earth, but this can be established by repeated observations under a variety of circumstances and orientations.

B. *Negative arguments.*

A second use of mathematics in the science of nature, according to Aristotle, is to exclude the possibility of certain physical hypotheses, since what is contradictory in mathematics cannot be true in physics (although the converse does not hold). Aristotle at least alludes to several such arguments. For example he shows that a three dimensional body is perfect, taking for granted the argument that it is impossible to construct more

[9] *Post. Anal.*, I, 13, 78a 25 ff.

than three perpendiculars around a point.[10] Again he argues that only two simple motions exist, because it is impossible that there be any other simple magnitude except a straight or a circular line,[11] and that circular motion has no contrary, because it is impossible to have a vector which is contrary to a circular vector.[12]

C. *Dialectical arguments.*

Aristotle frequently uses mathematical arguments, whether apodictic or merely dialectical, to *confirm* physical arguments. Thus after giving his physical argument that the earth is at rest, Aristotele confirms this by a sign, namely that it can be shown geometrically that if the earth be moved there would be several observable alterations in the appearances of the heavens (parallaxes) which in fact are not observed.[13] Such an argument is only dialectical since it depends, as the Greeks well knew, on accuracy of measurement and the distance of the stars.

He also considers that arguments of this type are valuable in *supplementing* physical knowledge and extending it where insufficient evidence makes impossible a satisfactory theory of a purely physical type. Thus because the heavens are difficult to observe and are very different in character than terrestrial objects, it is difficult to form a physical theory about them which extends to the details of their number and arrangement. To have any idea of these we must resort to mathematical arguments of a probable sort, like those of Eudoxus and Callipus, which at least "save the appearances."[14]

[10] Aristotle does not give this demonstration, but evidently he is referring to a proof well-known to the geometricians, and later actually given by Ptolemy. Cf. St. Thomas Aquinas, *In De Caelo* I, 2, n. 7.

[11] *De Caelo* I, 2, 263b 18.

[12] *Ibid.*, 4, 271a 6 ff.

[13] *Ibid.*, II, 14, 296b 1 ff.; 297a 4. Cf. 13, 293b 27.

[14] "The questions of [the heavenly bodies'] order, their relative positions before or behind each other, and their distances from one another may best be studied in astronomical writings, where they are adequately discussed.

For Aristotle, however, such dialectical flights must remain under the control of physical theory. The mathematical theory of the spheres presupposes the physical theory of the ether and its physical motion and the mathematician should seek to modify his theory so that it will not only save the appearances but also be consistent with physical principles. For this reason Aristotle himself attempted modifications of the Eudoxian system.[15]

The use of mathematical reasoning most prominent in modern science is its *investigative* function. At first sight *De Caelo* does not seem to exemplify this use very plainly, since Aristotle seems to build up his physical theory very independently. But such an impression fails to take account of the historical perspective of the treatise. Many of the arguments which in Aristotle's formal exposition serve as confirmations, must have in historical fact *preceded* his physical demonstrations and pointed the way to them. Aristotle's great attempt to find a physical demonstration of the ethereal nature of the heavens, was provoked precisely by the arguments of the mathematical astronomers which had made it apparent that the puzzling irregularities of motion

. . . The others are influenced [in their velocities] in proportion to their distances, and how this works out is demonstrated by the mathematicians. [*Περὶ δὲ τῆς τάξεως αὐτῶν, ὃν μὲν τρόπον ἕκαστον κεῖται τῷ τὰ μὲν εἶναι πρότερα τὰ δ' ὕστερα, καὶ πῶς ἔχει πρὸς ἄλληλα τοῖς ἀποστήμασιν, ἐκ τῶν περὶ ἀστρολογίαν θεωρείσθω· λέγεται γὰρ ἱκανῶς . . . τὰ δὲ μεταξύ κατὰ λόγον ἤδη τῆς ἀποστάσεως, ὥσπερ καὶ δεικνύουσιν οἱ μαθηματικοί.*] " (*De Caelo* II, 10, 291a 29 ff.)

[15] Aristotle's revision of the theory of the mathematicians is indicated in *Meta.*, Λ, 8, 1073b 18 ff. See St. Thomas Aquinas, *In Meta.*, XII, 10; J. L. E. Dreyer,, *A History of the Planetary Systems from Thales to Kepler* (Cambridge, 1906)ch. 4-5; Pierre Duhem, *Le Système du Monde* (Paris, 1913-17) I, 91 ff.; and Morris Cohen and I. E. Drabkin, *A Source Book of Greek Science* (New York, 1948) pp. 101-104. Aristotle's special contribution was to add a series of counter revolvant spheres, which have been criticized (e. g., by Dreyer) as mathematically unnecessary. But Aristotle was interested not only in mathematical simplicity, but also in physical plausibility. Hence he wished to equip each planet with a complete set of movers of its own, rather than to suppose a completely monistic system. It is characteristic of Aristotle's pluralism to be suspicious of excessively unified systems in the order of material things. See *Politics* II, 1261a 18 ff.

exhibited by the planets, could possibly be the result of objectively regular motions.[16]

Similarly the astronomical arguments for a stationary earth are probably historically prior to Aristotle's physical argument. The apparent nonexistence of stellar parallax was undoubtedly the chief reason that only geocentric theories seemed credible to Aristotle and his contemporaries.[17]

Thus the *De Caelo* ought to be read not as a treatise which ignores the value of mathematical reasoning,[18] but as an attempt

[16] Duhem, *loc. cit.*

[17] Cf. *De Caelo* II, 8, 289b 1 ff.; 14, 296b 4. Simplicius tells us (*In Physicorum*, ed. Heiberg, pp. 444-45) that Herakleides of Pontus (a contemporary of Plato and Aristotle, possibly their pupil) had proposed the theory that the earth rotates, and that Aristotle intended to refute this theory. Among the ancients there were really four positions: (1) The diurnal motion is caused by the rotation of the heavens around an immobile earth (Aristotle). (2) It is caused by a rotation of the heavens relative to a counter rotation of the earth. (This, according to F. M. Cornford, *Plato's Cosmology* [London, 1937] pp. 120 ff., is Plato's theory in the *Timaeus*.) (3) It is caused by a revolution of the earth in a small orbit about the Central Fire (the older Pythagoreans). (4) It is caused by the rotation of the earth, while the heavens are immobile (Herakleides of Pontus; the peripatetic Aristarchus of Samos [c. 310-230 B.C.]; and Seleucus of Seleucia [c. 150 B.C.]).

[18] Aristotle is frequently accused of a prejudice against mathematics. Nevertheless, the Peripatetics did not neglect it, and, as we can see from the collection of texts in Sir T. E. Heath, *Mathematics in Aristotle* (Oxford, 1949), Aristotle's remarks on mathematics are quite copious. Heath says: "Aristotle was evidently not a mathematician by profession, but he was abreast of the knowledge of his day as far as elementary mathematics is concerned. . . . But it does not appear that Aristotle had given any attention to higher mathematics." (p. 1.) This last point does not seem to me to be proved by the lack of references to problems of higher mathematics in Aristotle's works. Heath himself states: "The importance of the proper understanding of the mathematics of Aristotle lies principally in the fact that most of his illustrations of scientific method are taken from mathematics." (*ibid.*) Is it not natural to draw illustrations chiefly from *elementary* mathematics? Consider also the saying of Aristotle preserved by Diogenes Laertius, *Lives* V, 17 [Loeb edition, 1942] I, p. 460): "As sight takes in light from the surrounding air, so does the soul from mathematics. [ὡς ἡ μὲν ὅρασις ἀπὸ τοῦ περιέχοντος (ἀέρος) λαμβάνει τὸ φῶς, ἡ δὲ ψυχὴ ἀπὸ τῶν μαθημάτων.]" Two recent authors have shown both the profundity and the breadth of Aristotle's understanding of mathematics.

to formulate a physical theory, *presupposing* an extensive development in the Academy of the mathematical theory of the heavens which it accepts and uses, but which it also criticizes and modifies, not in defiance of the data of observation, but with the purpose of achieving a theory which accounts for more than quantitative data.[19]

2. Non-Mathematical but Common Arguments

No mathematical argument is proper to the science of nature since even when it assigns the proper reason (*propter quid*) of the conclusion, this reason is known to us by the light of mathematical and not of physical principles. Such arguments are common and not proper. In still a broader way it is possible to use arguments in the science of nature based on principles common to all sciences. It is such arguments which Aristotle frequently refers to as "logical" or "dialectical."[20]

These Aristotle uses for several purposes:

(a) Sometimes dialectical reasons are used to persuade the student to accept evident truths which, if they are to be demonstrated at all, can only be demonstrated by some science other than physical science. Examples of this are found at the beginning of Book I[21] where it is argued that the world has three dimensions because every whole has a beginning, middle

See H. Apostle, *Aristotle's Philosophy of Mathematics* (Chicago, 1952); and R. Brumbaugh, "Aristotle as a Mathematician," *Review of Metaphysics* IX (1955) 379-393, and Philip Merlan, *From Platonism to Neoplatonism* (Hague, 1953) pp. 119-131.

[19] On the scientific interests of the Academy in which Aristotle was trained, see G. Sarton, *A History of Science* (Harvard, 1952) 11, pp. 275 ff.; also W. Jaeger, *Aristotle, Fundamentals of His Development* 2d ed. (Oxford, 1948) 1, p. 11; 13, pp. 324 ff.

[20] Cf., e. g., *De Caelo* I, 7, 275b 12 ff.; *De Gen. et Corr.* I, 2, 316a 10-14. See also St. Thomas Aquinas, *In De Caelo* I, 15. On dialectics, see J. Isaac, O. P., "La notion de dialectique chez Saint Thomas," *Revue des Sciences Philosophiques et Théologiques*, XXXIV (1950) 481-506; J. Hogan, "The Dialectic of Aristotle," *Philosophical Studies*, I (1955) 1-21.

[21] *De Caelo* 268a 11 ff.

and an end, and because three is a sacred number. Again at the beginning of Book II [22] popular beliefs and the etymology of names are brought to the support of Aristotle's contention that the heavens are perpetual and, as it were, divine. It is noteworthy that these dialectical arguments appear in the introductory sections of books.

(b) Again such arguments are used because no proper reason can be found to solve a problem. One of the most noteworthy cases is Aristotle's attempt to find a reason for the fact that both the superior and the inferior heavenly bodies have few motions, while the intermediate bodies have many motions. Admitting that it is very difficult to explain this arrangement, he brings to bear the principle that in every hierarchy of beings which seek a common good, there are several grades. Some beings will attain the good very perfectly and in but a few steps. Others will attain it with some perfection but at the price of many steps. Others will attain it very imperfectly and will be capable of only a few steps toward it. Finally the least will not attain it at all and will make no effort to do so. Obviously such a principle can be applied not merely to the heavenly bodies, but within many different sciences and to quite equivocal things.[23] Aristotle himself seems to make use of it to explain the classes in human society.[24] St. Thomas Aquinas uses it to discuss the hierarchy of angels.[25] It is thus a common and analogical principle, properly studied in metaphysics. But here Aristotle makes use of it for lack of a proper principle that would assign the precise physical causes of the phenomena.

(c) Finally Aristotle uses dialectical arguments as confirmations. Thus in arguing against the infinity of the world he

[22] *Ibid.*, 284a 3 ff.

[23] *Ibid.*, II, 12, 292a 15 ff.

[24] *Politics* I, *passim;* in the *De Caelo* he uses the example of grades of health.

[25] *Summa Theol.*, I, 108, etc.

uses certain arguments which are based on the properties of "the infinite," but since "infinite" is ambiguous and might mean either the mathematical or the physical infinite, these arguments cannot give a strict physical proof, but only a confirmation.[26]

3. Physical Arguments

The foregoing arguments do not proceed through media proper to the science of nature, hence all are dialectical with respect to it.[27] But even when an argument procedes through a genuinely physical middle term, it may be only dialectical because the reason given is not the precise, or *propter quid* reason, but only a sign or some remote reason.[28]

For example:

a. The perpetuity of the motion of the heavens is inferred from the fact that over a very long period of time astronomers have never noticed any changes in the positions of the fixed stars. This is of course a sign of the perpetuity of the heavens, but as the Peripatetics recognized it is not conclusive, since the change might be a very slow one.[29]

b. The parts of the heavens are shown to be differentiated by an analogy taken from the parts of animals. All the terms used here are physical and pertain to matter in motion, but Aristotle

[26] St. Thomas Aquinas, *In De Caelo* I, 15, n. 3. Other examples are given in the same *lectio*.

[27] See references in note 20 above.

[28] *Prior Anal.*, II, 27, 70a 3 ff.; *Post. Anal.*, I, 13, 78b 12 ff.

[29] In relation to this point St. Thomas Aquinas states, "Nec tamen hoc est necessarium sed probabile. Quantum enim aliquid est diuturnius, tanto majus tempus requiritur ad hoc quod ejus mutatio deprehenditur. . . . Posset igitur aliquis dicere quod, etsi caelum sit naturaliter corruptibile, est tamen tam diuturnum, quod totum tempus cujus memoria potest haberi, non sufficit ad deprehendendum ejus transmutationem." (*In De Caelo* I, 7, n. 6.) Aristotle himself seems to be speaking tentatively: "The truth of it is also clear from the evidence of the senses, enough at least to warrant the assent of human faith . . . [*συμβαίνει δὲ τοῦτο καὶ διὰ τῆς αἰσθήσεως ἱκανῶς, ὥς γε πρὸς ἀνθρωπίνην εἰπεῖν πίστιν.*]" (*De Caelo* I, 3, 270b 13.)

makes clear that he is only using analogical reasoning of a sort which must be treated very cautiously.[30]

c. The reason that the diurnal motion of the heavens is from east to west is *tentatively* ascribed to the superior nobility of the right (the east half) of the heavens, but what this nobility consists in physically is not ascertained.[31]

d. It is concluded that the stars have no independent motion because no good reasons for such motion have been assigned by anyone.[32]

e. It is argued that none of the planets have an independent rotary motion because the moon does not. Here a conclusion is drawn from one known case to other similar cases, but obviously there is no universal premise which makes such an argument apodictic.[33]

f. In proving the finitude of the world Aristotle adduces several arguments which he himself calls merely "logical," because in them he uses premises which seem plausible but which he has not proved.[34]

Finally the purpose of all such arguments is merely to introduce a question or to confirm a solution on more solid ground, or perhaps (as in c.) to replace less probable opinions by something more probable.

It is now necessary to examine in detail the arguments which Aristotle, at least at first sight, seems to intend as truly demonstrative, and which form the essential reasoning of this treatise.

[30] *De Caelo* II, 2, 284b 11 ff.

[31] *Ibid.*, 285a 29.

[32] *Ibid.*, 8, 290a 27. St. Thomas Aquinas remarks on this passage against the attempt of Simplicius to defend Plato's theory of the rotation of the stars, "Quia propositum Aristotelis fuit non recedere ab eis quae ad sensum apparent, quia talis circumgyratio non sensibiliter apparet in stellis, ideo non asseruit hunc motum in stellis esse, licet non directe improbaverit." (*In De Caelo* II, 12, n. 7.)

[33] *De Caelo* II, 8, 290a 25. Cf. also 11, 291b 23.

[34] *Ibid.*, I, 7, 275b 12 ff.

They will be taken up in the same order as the principal questions already enumerated in my first article.[35]

A. *The proofs contained in Book I*:

(1) The *quantitative* perfection of the universe is not established by formal proof, but is referred to

(a) The common certitude (whose proof pertains to mathematics) that bodies contain only three dimensions.

(b) The proposition admitted by all that by "universe" we mean a body, and indeed all extended bodies.

Since these propositions are taken as evident in physical experience no special proof of them is required within physical science.

(2) The *specific* perfection of the universe is a very obscure problem and requires formal proof for its solution.[36] Aristotle's procedure is to show that the universe is perfect because it is integrated from sufficient parts. The medium thus pertains to the order of material cause, since the parts of a thing are as its matter. Moreover by this argument Aristotle also establishes, in a sense, the *formal* cause or perfection of the universe, since the form is in a manner defined when we conceive it as the unity of such and such parts. It is as if we were to make a kind of definition of an animal as "the whole composed of this enumerated series of organs." [37]

This procedure is the clue to the difficult problem raised in the previous article [38] as to how Aristotle could have hoped to grasp the basic plan of the universe and to use it as a better known principle to explain things which seem much closer to

[35] Part I: "Problematics of the *De Caelo*," THE NEW SCHOLASTICISM, XXXII (1958) 14.

[36] Some valuable suggestions on the use of the causes in the *De Caelo* and other physical treatises is contained in R. McKeon's introduction to *The Basic Works of Aristotle* (New York. 1941).

[37] This method is pursued by Aristotle in all his biological works, as a study of the problematics of the *De Partibus Animalium* will show.

[38] Part I: "Problematics of the *De Caelo*," THE NEW SCHOLASTICISM, XXXII (1958) 17 ff.

home. Evidently he did not claim to grasp the form of the universe as something evident, but realized that its formal perfection is something beyond human ken. Rather he hoped that this perfection of the whole would be certainly, although vaguely, evident in its *parts.*

But how could he have hoped to get a sufficient enumeration of the parts? Why should there not be other essential parts of which we know nothing? Yet unless we know all the parts in relation to each other, how can we be sure that even the parts we do know are essential ones? The answer to this puzzle is surely to be found in the principle well known to the Peripatetics that we can be sure that we have a sufficient ennumeration of parts in a unified whole, if we can discover the *formal* or *ultimate* part. Aristotle in his biological works frequently makes use of the notion that in an organic structure there is a part which is indeed a part and yet which is, as it were, the *vicar* of the whole, because it participates in the characteristics of the whole in a unique degree, and has the function of communication of this unity to the less perfect parts. Thus if we know the heart to be the principal organ in an animal, even if we do not yet know the other essential parts in a distinct manner, we have a correct schematic notion of the animal as a whole. The other parts will be the instruments of the heart needed for its full functioning, and the knowledge of them is virtually contained in our knowledge of the heart.[39]

Aristotle thought he had discovered this formal part in the *ether*; to demonstrate its existence is the chief task which he

[39] This is most evident in the argument of the *De Motu Animal.* See also *De Part. Animal.*, II, 4, 665b 1 ff.; *De Somno et Vigil.*, 2, 456a 1 ff.; *De Senectute*, 3, 469b 27 ff.; *De Respiratione*, 8, 474a 25 ff.; *De Gener. Animal.*, II, 4, 738b 16. For a discussion of the way in which a principal part is at once a part (i. e., having the *ratio materiae*) and at the same time formal (i. e., having the *ratio formae*), see C. De Koninck, "In Defense of St. Thomas," *Laval Théologique et Philosophique*, I (1945) with the texts of St. Thomas there cited.

sets himself in the first book of *De Caelo*. The fundamental proof offered by Aristotle may be formulated as follows:[40]

If a simple natural motion exists there must exist a simple body to which this motion is natural.

But there exists a simple natural motion other than the rectilinear motion of the terrestrial elements, namely the circular motion of the fixed stars.

Therefore, there exists a simple body other than the terrestrial elements, to which body circular motion is natural and which we may call the "ether."

Only one point in this demonstration has to be established in the present treatise. Already in the *Physics*[41] Aristotle has treated of the major premise, since it is only a form of the fundamental physical principle that natural motion proceeds from and manifests the nature of the thing which moves. Furthermore in Book VIII of the same work[42] Aristotle has attempted to show there must exist a simple circular motion; otherwise motion would not be perpetual.

The purpose of this proof is to show that this simple circular motion whose existence is already proved, has its existence in a body proportionate to it. This is in keeping with the general purpose of the *De Caelo,* to apply motion and its properties as they have been analyzed in the *Physics* to the bodies in which motion exists, and which are made known to us through it.[43] The new step in reasoning which enters this proof is the identification of this simple circular motion with the observed diurnal motion of the heavens. This identification is made by showing that circular motion cannot be a property of the four terrestrial elements, nor can it even be in them contrary to nature. If it is present at all, it is there by impression from some other body. This follows from the fact that the terrestrial elements have rectilinear motions to and from the center of the earth, hence

[40] *De Caelo* I, 2, 269a 2 ff.
[41] *Phys.*, II, 1, 192b 20.
[42] *Ibid.*, VIII, 8, 261b 27 ff.
[43] *De Caelo* 1, 1, 286a 1.

their natural motion is not circular, nor is it contrary to circular motion, but to the corresponding rectilinear motion. Since circular motion is not a property of the terrestrial elements, it must exist in some nonterrestrial body, which we call the "ether" and which we may define in terms of motion as the "elemental body whose natural motion is circular (the form) and which does not have a potentiality to a contrary (the matter)." Using the latter part of the definition we may demonstrate that ether has neither gravity nor lightness, nor can it be generated, altered, or increased, since all of these imply a contrariety of terms. The only kind of change it can undergo is local motion.[44]

What value did Aristotle intend should be given to this argument? It is physical in character, but is it dialectical or demonstrative? Obviously Aristotle could not have given it more weight than to the principle on which it rests, the *perpetuity of motion*. Throughout the history of Aristotelianism this question has been endlessly debated. Since the time of St. Thomas Aquinas it has been generally admitted that the arguments given by the Stagirite for the perpetuity of motion are in fact merely dialectical, but there is no agreement as to whether Aristotle realized this.

Without entering into the general problem of Aristotle's ultimate views on this subject, let us consider the question only in the context of his physical works. We know in advance from the *Topics*[45] (generally admitted to be an early work) that Aristotle was fully aware that this problem was a difficult one. In *Physics VIII*[46] he presents the possibilities: either motion

[44] *Ibid.*, 3, 289b 18 ff.

[45] *Topics* I, 11, 104b 8.

[46] 1, 250b 15 ff. Cf. Gérard Verbeke, "La structure logique de la preuve du Premier Moteur chez Aristote," *Revue Philosophique de Louvain*, XLVI (1948) 137-160. The author believes that Aristotle omits two logical possibilities, namely that motion began but will not end, and that it never began but will cease sometime. He explains this by saying that these are

is perpetual, or the universe is sometimes quiescent and sometimes in motion, or the universe did not always exist but came to be by a process of change. The Pre-Socratics proposed various forms of the second possibility; Plato proposed the third. Of course another exists, the one which Christian revelation actually shows to be the true one, namely that the universe did not always exist, yet came to be not by a process of change but by creation, an action of a metaphysical, not a physical sort.

Aristotle ignores this last possibility. Perhaps he never thought of it, since it certainly was not clearly presented by the thinkers with whom he was disputing. But even if he had thought of it, it would not have been relevant to his purpose in *Physics VIII*. Aristotle is compelled by his own methodology rigorously to exclude questions or explanations which fall outside the proper scope of a particular science, in this case the science of the naturally changeable. Hence the scientist of nature does not investigate problems which are not problems of change. To be sure he may be led by his study of change itself to show that change is *impossible* unless there exist non-changing, nonphysical causes (the separated intelligences and the human soul), but he does not investigate these causes as such, nor does he have recourse to them in explaining physical things, except when any other explanation is *physically impossible.*

Thus the problem of creation is not a problem of natural science, since creation is not a process of change. Nor should it be considered as a proper explanation of physical facts, unless some other explanation is physically impossible. Now it is not impossible from a physical point of view that motion be eternal,

eliminated by the argument given in *De Caelo* I, 10-12. Hence, Verbeke concludes, *De Caelo* I was written before *Physics* VIII. This disregards the context. In *Physics* VIII it is sufficient for Aristotle to establish that motion is perpetual *in some sense.* The alternatives are that motion has been perpetual in the past, but that it began in the past from rest; or that it began in the past by a process. In *De Caelo* I, the problem is not about motion itself, but about the *body* (the universe) which is in motion; this raises the further alternatives there discussed.

while the other physical alternatives of the Pre-Socratics and Plato are really impossible. Hence Aristotle concludes that the scientist of nature must proceed on the view that motion is eternal.

This of course does not prove that it is in fact eternal. The metaphysician is still free to discuss whether by his absolute power God could have made the world finite in time, and he will certainly conclude that this is possible.[47] Christian revelation shows us that in fact it is the case. Furthermore it is possible that a more detailed knowledge of the physical universe will give many signs that this is so. In this case the scientist of nature is not transgressing his proper boundaries if he gives serious consideration to this as a hypothesis which may help

[47] For a review of some of the numerous recent studies on the unmoved mover, see J. Owens, "The Reality of the Aristotelian Separate Movers," *Review of Metaphysics*, IV (1950) 319-37. Four difficulties preoccupy most of these studies: (1) Is the proof logically coherent? (2) Is the proof given in *Physics* VIII consistent with the discussion in *Metaphysics* Λ and the *De Caelo*? (3) Is the first mover an efficient cause of motion as well as a final cause? (4) Is the first mover the cause of *existence*, and not merely of form? St. Thomas Aquinas considered all these questions explicitly in his commentaries on Aristotle and gave them affirmative answers, following a method of exegesis which sought to interpret difficult passages in terms of the basic principles of Aristotle's method and doctrine, and to render him consistent with himself and with truth, when this could be done without violence to the text. This "benign" type of interpretation is rejected by contemporary writers in favor of a genetic method which prefers to discover evidences of development in every apparent inconsistency, or of a minimalist type of interpretation which seeks to establish "pure systems" in which the contrast between Aristotle and his scholastic commentators is interpreted in terms of basic differences in principle rather than in terms of a difference in emphasis. The weakness of these last two methods is found in the fact that they quickly reduce Aristotle's works to a jumble of incoherencies, or at least to a system which was left radically incomplete. Why have not these contemporary studies observed, for example, that in *Metaphysics* Λ the first mover is first proved to exist by reason of the fact that he is an *efficient* cause, and that the problem of final causality is there stressed precisely because this problem alone remains to be discussed? Aristotle is concerned not with proving that the Prime Mover as *efficient* cause can be unmoved (this was carefully established in *Physics* III, 3, 202a 12 ff.), but with discovering *why* it is an *unmoved* mover. The reason is that it is the ultimate end of all things, the *causa causarum*.

him to understand nature. In our time this is actually the case,[48] but in Aristotle's time the evidence was on the whole in the opposite direction.

Aristotle's silence on the possibility of a universe finite in time is thus entirely consistent with his method. If we are to blame him for not explicitly indicating that his conclusion is provisional and not ultimate, holding for physical but not for metaphysical reasoning, this will not be on the grounds that he has failed to arrive at the proof of the Unmoved Mover. But it seems preferable to accept the text as it stands. Speaking as a natural scientist who does not introduce metaphysical explanations as the proximate and proper explanation of natural phenomena, Aristotle would have violated his own method if he had proceeded on the basis of an alternative which is not physical in character unless there had been serious reasons for doing so. The Christian who believes that as a matter of fact the universe is finite in time has such a reason, and need feel no scruple in using this information to simplify his scientific thinking.[49] Furthermore the modern scientist who has before him many evidences suggesting that the universe is finite in time, also has reasons for considering the alternative. But Aristotle had neither reason; religious considerations rather inclined him to the eternity of the world, and no important scientific information suggested it as unlikely; rather the contrary.[50] I would conclude,

[48] See the address of Pope Pius XII to the Pontifical Academy of Sciences of Nov. 22, 1951 (*Acta Apostolicae Sedis*, 1952) pp. 31-43.

[49] See the addresses of Pope Pius XII to the Pontifical Academy of Sciences of April 24, 1955 (*Acta Apostolicae Sedis*, 1955) pp. 394-401, and to the Fourth International Thomistic Congress, Sept. 14, 1955 (*ibid.*) pp. 683-690, for a discussion of how a sound philosophy guided by theology can actually assist the development of natural science, not only by freeing it from the influence of erroneous philosophical notions, but also positively, by giving basic principles through which the world of nature is rendered intelligible.

[50] See especially the fragments of the lost dialogue *De Philosophia*, which are supposed to be contained in Philo's *De Aeternitate Mundi* (Rose, 3d ed.) Nos. 17-18.

therefore, that the text of Aristotle makes more probable that he proposed the eternity of the world only as a hypothesis but as the one required by sound physical method.[51]

But how did Aristotle hope to identify this circular motion with the diurnal motion of the heavens? The possibility obviously remains that even if there is a circular motion in the universe proper to some etherial body this body may not be the visible heavens but some more ultimate one. In fact physics since Copernicus has developed in the direction of granting that the bodies we see are similar to those on the earth, and that the cyclical motions which they exhibit are impressed on them, either by some more ultimate unknown body, or by some primordial event. Aristotle does not make any special argument to establish this identity except the common opinion, backed by astronomers, that the heavens have not changed, which is evidence that the circular motion is proper to them and not

[51] The words of St. Albert the Great are very instructive: "Dicet autem fortasse aliquis nos Aristotelem non intellexisse: et ideo non consentire verbis ejus: vel quod forte ex certa scientia contradicamus ei quantum ad hominem, et non quantum ad rei veritatem. Et ad illum dicimus, *quod qui credit Aristotelem fuisse deum, ille debet credere quod nunquam erravit.* Si autem credit ipsum esse hominem, tunc procul dubio errare potuit sicut et nos: tamen hoc modo quo rationes suae inducuntur, non sequuntur nisi quibusdam propositis, scil. nihil incipere nisi mutatione physica, et nihil incipere nisi in tempore: et talibus suppositis, nos bene concedimus quod rationes suae sunt de necessitate concludentes. . . . Si autem quaeratur de aliquo dicente, quod si vera sunt quae dicta sunt, quare Aristoteles qui multa subtilia intellexit ista non dixit. Dico omnino mihi videri Aristotelem bene intellexisse non esse necessitatem in suis rationibus, quibus visus est probare mundum aeternum esse: et hoc ipse manifestat in pluribus libris *Caeli et Mundi* [II, text. com. 34 et 60], ubi dicit quod inquisivit ista ex cupiditate quam habuit in philosophia, et reddit causas quibus minus quam aliis contradici potest: et hoc erat signum, quod ipse scivit se demonstrationem non habere: quia demonstrationi non potest aliquo modo contradici: et si etiam ab omnibus contradiceretur, non propter hoc minus esset necessaria, quam si a nullo contradiceretur. Aristoteles autem non consuevit dicere in *Physicis* nisi physica quae physicis rationibus possunt probari. Sed *inceptio mundi per creationem, nec physica est, nec probari potest physice, et ideo hanc viam putatur Aristoteles tacuisse in physica,* et non tetigit eam expresse nisi in libro *De Natura Deorum* quem ipse edidit." (*Lib. VIII Phys.* VIII, tract. 1, 14.)

impressed on them. This is obviously a dialectical and not a demonstrative reason.[52] The truth seems to be that Aristotle considered this identification highly probable, and not opposed by existing contrary evidence.[53]

The texts of the *Physics* and the *De Caelo,* therefore, do not permit us to assert that Aristotle considered his argument that the visible heavens are composed of ether and that the universe is thus infinite in time as more than highly probable. It is thus a dialectical argument, differing nevertheless from those of the mathematicians in that it is strictly physical in character.

The arguments against the quantitative infinity of the universe which make up the rest of Book I are, however, of a more conclusive character, in spite of their great complexity.

Already in *Physics III* Aristotle has disproved the infinity of the universe on the supposition that it contains only straight line motions; here he must exclude infinity even for a universe where there are circular and perpetual motions.

a. He first gives six arguments of a mathematical character which show that the revolution of an infinite sphere involves many contradictions.[54]

b. He next gives two arguments of similar character to show that in a universe where there is circular motion and hence also

[52] *De Caelo* I, 3, 270b 5 ff.

[53] In the Aristotelian theory of demonstration, the certitude of a conclusion rests on the immediate evidence of the premises. When one has given his strongest reason for a conclusion, his auditor either sees it and then does not need to be told that the conclusion is certain, or he does not see it. In the latter case, he cannot be convinced except by a return to the dialectic by which the premises are manifested. Hence it is not customary in the writings of Aristotle (nor in those of St. Thomas) to meet with assertions that such and such a *principal* argument is or is not apodictic. This they leave to the reader. When they characterize an argument as insufficient or merely probable, it is usually either because they wish to reject it in order to make way for their principal argument, or because they are dealing with a question in which only slight probability is possible, and some excuse for giving any argument at all seems demanded.

[54] *De Caelo* I, 5, 271b 1 ff.

straight motions to and from the center, such straight motions must be finite.[55]

These two sets of proofs show the absurdities which result from the double assumption of an infinite universe and a universe built on the plan of perpetual change. Consequently they have only the value of the hypothesis of perpetual change. Aristotle however also offers two further proofs which, as St. Thomas Aquinas remarks,[56] are more powerful because they use a much more universal medium.

(1) The first proof uses as a premise the proposition that there are only a finite number of kinds of simple motions in the universe. From this it follows that no way of combining finite or infinite parts can produce an infinite universe.[57] This proof is also from the *material cause,* arguing that from parts of a certain sort, a whole of a certain sort cannot be composed, just as a saw cannot be composed of paper. Nevertheless the enumeration of the parts depends on the enumeration of *places,* and since the number of places is only determined by the existence of the circularly moved ether, this proof also depends on that hypothesis. This proof can be saved by the further consideration that in an infinite universe there would have to be an infinite number of systems of places having no natural connection and merely contiguous to each other, so that our universe (i. e., our system of natural places) would be naturally independent of other systems.

(2) The second universal proof is based on action and passion, that is, on the law established in the *Physics* which requires a proportion between the magnitude of a body, its active and passive power, and the time in which it acts or receives.[58] It follows evidently that for a body whose magnitude

[55] *Ibid.*, 6, 273a 7 ff.
[56] *In De Caelo* I, 13, n. 1.
[57] See the exposition of this proof by St. Thomas, *loc. cit.*
[58] *Phys.*, VI, *passim.*

is infinite this law could not be verified, since its magnitude would be out of all proportion to any action, passion, or time. Therefore, since the law follows from the very nature of motion, an infinite body is impossible.

It is very remarkable that this proof, which is Aristotle's final word on the subject, carefully by-passes the theory of circular and perpetual motion, and relies on a prior theorem of great solidity. It is a proof also taken from the *material* cause, since its medium is the incapacity of the infinite to receive any proportionate form of motion.

Aristotle, after disposing of infinite magnitude, attempts to refute the possibility of a plurality of universes by three arguments.[59]

(1) The first and second of these arguments show that if there were many universes a given body would have several natural places differing only numerically yet placed in diverse directions. The body would therefore be subject to contrary natural motions, and since natural motions and natural places are interdependent, this indetermination of motion would imply an indetermination of place. Thus the contradiction would result that places would be determinate (since they form a universe) and at the same time and in the same respect indeterminate (since they would be the goals of contrary motions).

This line of argumentation again proceeds from the *material cause* since it discovers a contradictory capacity for motion. Although Aristotle states it in terms of his spherical universe, it seems not to be dependent for its force on that doctrine, but merely on the general doctrine of natural places.

(2) The third argument is of a very different sort. Since *Physics VIII* has proved the existence of the primary agent of change, it follows that all bodies will form one universe at least in the sense that they have one efficient cause. This is an argu-

[59] *De Caelo* I, 8, 276a 18 ff.

ment from *efficient*, and also from *final* causality, since the unity of the universe is seen as an effect of the unity of purpose possessed by the primary agent. In connection with this proof Aristotle also resolves a difficulty raised by the fact that the universe is a form existing in matter, and that such "enmattered" forms can be multiplied.[60] He shows that this rule holds only when there exists more matter than is required by a given form, so that a unique material individual (embracing all matter) is not a contradictory notion.

The last possibility of an infinity is that of duration. This Aristotle has already accepted as a necessary consequence of the perpetuity of change argued in *Physics VIII*. Here in *De Caelo* he is concerned only with refuting the views of those who held not a creation, but a *generation* of the world, i. e., its production from pre-existing matter. Aristotle's procedure here is a very complicated one and his point is to show the necessary connection between generability and corruptibility.[61] Fundamentally he argues:

> Nothing perpetual is generated, nor is it corrupted.
> But all ungenerated and all incorruptible things are perpetual.
> Therefore, no ungenerated thing is corruptible and no incorruptible thing is generated.

Thus the assumed perpetuity of the universe excludes any process by which the universe taken as a whole can receive or lose its total form. The concept of *creatio ex nihilo*, however, is neither proposed nor refuted.

Therefore as regards the infinity of the universe Aristotle established:

(1) There can be no infinity of *magnitude* or *multitude* for the universe. At least part of the argumentation in support of this proposition is independent of the doctrine of perpetual change.

[60] *Ibid.*, 9, 277b 27 ff.
[61] *Ibid.*, 10, 279b 4 ff.

(2) There must be an infinitude of *time* as regards physical processes (not as regards creation), *if* the doctrine of perpetual change is true.

B. *The Proofs contained in Books II-IV*:

The proofs contained in the subsequent books depend almost entirely upon the theory of the spherical universe developed in Book I. Book II attempts to find middle terms by which the observed phenomena of the heavens can be connected with the definition of the ether already given, a definition which, as we have seen, explicates principally the *material* cause. Thus the motions, order, and figure of the heavenly bodies are all assigned so as to be consistent properties of an element which is in potency to local motion alone and not generation, alteration, or corruption. In each case the observed phenomena are carefully "saved." Aristotle himself admits that most of these proofs, even granted the incorruptible ether, are merely probable.[62]

This book concludes with the famous demonstration of the stationary earth. The argument from the absence of parallax and from the absence of a deflection of a falling body have already been considered. They are extrinsic and confirmatory arguments based on signs and they could not be apodictic because they depend upon the accuracy of measurement.[63] The other two proofs however are the principal ones and evidently intended to be demonstrative.[64]

[62] *Ibid.*, II, 3, 286a 3-10; 5, 287b 29-288a 2; 10, 291a 29, 29b 1; etc.

[63] See Dreyer, *op. cit.*, ch. 4 and pp. 141 ff. The chief failure of the Eudoxian-Aristotelian system was that it did not account for the manifest variation in the brightness of the planets, especially of Venus and Mars, nor for the occurrence of annular eclipses of the sun; which facts indicated that the heavenly bodies are not at a constant distance from the earth, and hence the theory of concentric spheres could hardly be correct. Simplicius reports (*In Physicorum*, ed. Heiberg, p. 505) that Aristotle in his *Problems* (now lost) recognized this difficulty. Perhaps Aristotle is hinting at this in *De Caelo* II, 13, 292a 15, as Dreyer suggests (*op. cit.*, p. 142).

[64] *De Caelo* II, 14, 296b 7 ff.

(1) Proof 1 argues that we can ascertain by observation that clods of earth do not have a naturally circular motion. Hence if the earth which is made up of such parts moves, it moves *violently*. This is a proof from the *material* cause, passing from the parts to the whole.

(2) Proof 2 argues that we can see that the parts of earth move naturally to the center of the world, and therefore they rest there naturally. This proof is rather from *formal* causality, since the center is the container and proper form of the earth at rest.[65]

These two arguments presuppose the previous arguments by which the center of the earth was identified with the center of the circular motion of the heavens. If the earth were moved violently (Proof 1) then it could not be a permanent feature of the universe, since the violent cannot be perpetual. But if there were no earth, there would be no physical center, and this would be contradictory to the existence of the circular movement which must be about a center which is a real and actual place. Proof 2 concludes that since earth is naturally "sluggish" or inert, moving by its gravity toward the center of the universe, and this center is in fact the point at the center of our earth, the earth as a whole will remain stationary. Thus both proofs depend on the theory of the ether, and hence on the doctrine of perpetual change.[66] Thus Aristotle was driven to his famous

[65] *Phys.*, IV, 4, 211b 10-13, shows that the form cannot be place; but in *De Caelo* IV, 3, 310b 7, and elsewhere, Aristotle shows that natural place resembles form.

[66] St. Albert the Great shows very elegantly that Aristotle in this discussion attempts to assign the *propter quid* of the earth's stability according to all four causes: "Si nos ex omnibus dictis velimus colligere veram causam immobilitatis terrae, dicemus quidem, quod causa prima est medium universi, quod accipit terra pro loca; et haec causa appropriatur per hoc quod medium quidem est immobile, propter hoc quod est remotissimum a circumferentia: est enim concurrens propter distantiam a motu primo cujus frigiditatis constringit partes materiae et inspissat: et quia inspissat, inducit in ea frigiditatem et efficiuntur gravia et immobilia quae sunt ibi; et haec causa efficiens quietis terrae. Causa autem finalis est, quae in

conclusion not by some sort of anthropocentrism which holds that the earth as man's home must be the center of things, but rather by his belief in the eternity of motion. If the motion of the heavens is eternal, they are the most noble physical things. The earth on the other hand remains stationary by reason of its ignobility and inertness. The earth for Aristotle is the dregs of the universe.

Aristotle proceeds to establish the figure of the earth by an argument based on the premise that particles of earth all gravitate to the center. In Aristotle's mind this proof is connected with the theory of the center of the circular motion of the heavens. It is however a true demonstration, for it is a fact of observation that earth gravitates toward the center of gravity, even if this is not the center of the universe. Here we have an example of a genuine proof, and one which is *propter quid*.[67] It is also a true *physical* argument, although Aristotle confirms it with mathematical argumentation, since exactitude of measurement is unnecessary for its validity.

Book III is largely devoted to the discussion of the opinions of others, but in it Aristotle also establishes three points of general importance:

(1) He reaffirms the arguments already given in the *Physics* to show that there must be natural motions, and in this way removes from consideration the theories of elements put forward

ante habitis dicta est [referring to Aristotle's discussion of the grades of perfection in the universe, II, 12] quod scil. terra non participat nobilitatem causae primae, nec nobilitatem quae est juxta illam participat per motum, sed potius per quietem: et ideo status et quies omnium est in ipsa." (*De Caelo* II, tract. 4, 8.)

[67] It is *propter quid* because the medium is the physical cause of the effect; the fundamental property of earth to gravitate to the center is the proper cause of a secondary property, namely its figure. For an analysis of the Aristotelian doctrine on gravitation and its present validity, see J. A. Weisheipl, O. P., *Nature and Gravitation* (River Forest, Illinois, 1955); originally published in THE NEW SCHOLASTICISM, XXVIII (1954) 377-408; XXIX (1955) 50-81, 175-223.

by those who say that all things come from chance.[68] Aristotle admits the existence of a welter of chance movements in the sublunar regions, but maintains that some sort of uniformity is observable in this confusion, and this is due to natural motion.

(2) He establishes that there are a finite number of elements but more than one:[69]

(a) That there *are* elements he accepts from the simple fact of observation that we constantly see things resolved into simpler parts, but we do not observe that under natural conditions this is an infinite process.

(b) That the elements are finite in number he demonstrates by two proofs:

i. Bodies are constituted in species from the elements they contain. And there are a finite number of kinds of bodies in the universe. Therefore, there are a finite number of kinds of elements.

This proof which is *a posteriori* depends nevertheless on the premise that there are a finite number of natural places, which Aristotle proved on the basis of his spherical, perpetual universe. No doubt, however, it is capable of a more general formulation, since in a finite universe, an actually infinite number of determinate places would be impossible.

ii. A second proof based on the finite number of proper sensibles is an anticipation of the proof given in its proper place in the *De Anima*.[70]

(c) That the elements are more than one is easily proved *a posteriori* from the fact that we observe many kinds of things and many natural motions in the universe which could not arise from a single kind of element having a naturally determined motion.[71]

[68] *De Caelo* III, 2, 300a 20.
[69] *Ibid.*, 4-5, 302b 10 ff.
[70] III, 1, 424b 20 ff.
[71] *De Caelo* III, 5, 303b 9 ff.

(d) Finally Aristotle shows that the simple elements are the *ultimate* principles of generation and corruption by demonstrating that they can only be generated from each other. His proof proceeds by the exhaustion of possibilities:[72]

1. Things cannot be generated by an infinite process of "segregation" (i. e., separation of like parts from a confused mass of many kinds of elements) since this would take an infinite time.
2. Nor by dissolution into finite parts, since these would still be divisible, and the force which could corrupt the whole could still more easily corrupt the small part. Thus the process of dissolution would continue *ad infinitum*.
3. Nor by "transfiguration" (i. e., a change of shape) since things are not made out of mere mathematical entities.

These arguments, all based on *efficient* and *material* causality, have the merit of clearing the way for a theory of the elements which will not be riddled with the interior contradictions to be found in the atomistic and Platonistic (i. e., the mechanist and mathematicist) conceptions.

The arguments of Book IV consist in an attempt to demonstrate *a priori* from the structure of the universe established in Book I the necessary existence of the four sublunar elements. We have here the circular return of thought which is common in physical reasoning.[73] Aristotle has already attempted to arrive at the general structure of the universe *a posteriori*, for he has assumed in his proofs that we do observe straight-line motion, and certain elemental substances, although he has stabilized his proofs by the general theory of perpetual change. Having ascended from the more easily observed phenomena on the earth to discover their principle in the motion of the heavenly bodies, he now attempts to show that these phenomena are necessary effects of that principle. The ascending order thus proceeds from what is better known to us—because it is

[72] *Ibid.*, 7-8, 305a 33 ff.

[73] See St. Thomas Aquinas, *In Boeth. de Trin.*, V, 1 ad 9.

observable—to what is less known to us, the remote principle. But the strictly demonstrative order descends from the principle which is better known in itself to the effects which are now seen by us as objectively dependent on that newly discovered principle.

His procedure is as follows:

1. He refutes the relativist explanation of the heavy and the light. The existence of the relativistic aspect of gravitational motion he indeed affirms, but he shows it cannot be an ultimate explanation. Along with relativism he refutes the attempts to explain differences in gravity as due to *voids* or to differences in *rarity,* because such explanations are really forms of relativism.

2. He establishes his own view of absolute or ultimate elements by showing that if the universe is divided into a finite number of natural places, its elements will be bodies which have natural motions to these places.[74] Such a definition is obviously an absolute one.

3. It now becomes possible to demonstrate *a priori* that in the sublunar region there must certainly be at least the absolutely heavy element which occupies the central region as its natural place, and the absolutely light element which has its natural place in the concavity of the lunar sphere. This demonstration is from the *formal* cause, since place is like the proper form of a body, and if such a material form exists, the body which it informs must exist. Or from the dynamic viewpoint it is a proof from *final* cause, since if there is an end to be naturally attained, there must be a thing whose nature it is to attain such an end.

The intermediate elements, that is, the relatively light and the relatively heavy are asserted to exist because it is declared that there must be a space intermediate between the heavy and

[74] *De Caelo* IV, 4, 311a 15 ff.

the light. At this stage of the science such an assertion is based simply on the facts of observation which do indicate such an intermediate region, but the full proof is not possible merely on the basis of local motion.[75]

Aristotle concludes by pointing out that he has saved whatever truths of observation were contained in the other theories,[76] for he has conceded a certain relativism in the intermediate region and the intermediate elements, and has also conceded to the Platonists that the figure of bodies has something to do with their motion, not indeed with the direction of the motion, but with its velocity. In showing the latter point he explains how the shape of a body renders the resistance of the medium to its motion greater or less.[77]

4. Conclusion

The results of our examination of the demonstrations of *De Caelo* are twofold:

a. The main structure of *De Caelo* clearly depends on the theory of the natural regions of the universe, and this seems to depend, if it is to be considered more than a simple hypothesis saving the phenomena, on the theory of perpetual change enunciated in *Physics* VIII.

The series of propositions which follow on this main thesis are demonstrated through all the causes, but the *material* cause plays the greatest role because the elements are defined in terms which explicate their nature primarily as they are *parts,* i.e., the various kinds of matter from which the universe as a whole is composed. The *final* cause however also plays a great role, since the elements are differentiated by their tendency to move to different places as their goals. The *formal* cause is not explicated except in the very extrinsic sense that place, which is

[75] It is completed in the *Meteorologica,* I, 3, 339a 32 ff.
[76] That is, the theories discussed in Book III.
[77] *De Caelo* IV, 6, 313a 14 ff.

the goal of motion, is also a kind of formal cause of the body at rest. The *efficient* cause of local motion is hardly discussed, although we see that the ether is evidently an efficient cause with respect to the sublunar region, and that the ether is directly moved by spiritual first movers.

b. On the other hand there are numerous proofs which although they are incorporated in this general line of argument, are also traced back to other principles than the doctrine of perpetual motion and hence do not necessarily stand or fall with the theory of specific places. These can be listed as follows:

Book I:

1. The quantitative perfection of the universe in its three dimensionality and its inclusion of all bodies.
2. The finite magnitude and the uniqueness of the universe as they can be proved from the proportion of action and passion, magnitude and time, and by the necessity of determined natural places, and by the unity of the prime efficient and final cause.
3. The impossibility of a natural generation or corruption of the universe.

Book II:

1. The proof that the motion of the heavens must be complex since they cause the seasonal cycle on the earth.
2. The mathematical arguments against the motion of the earth.
3. The physical and mathematical arguments for the spherical figure of the earth and moon.

Book III:

1. The refutation of the arguments against natural motion and its reaffirmation.
2. The argument that there must be elements, and that they are not merely one. The actual proof given of their finite number, however, is not independent of the doctrine of perpetuity of change.
3. The argument for the mutual generation of the elements is *perhaps* an independent one.

Book IV:

1. The argument that there must be absolute elements, although additional relative elements are also possible.

2. The explanation of gravity as a natural motion caused *per se* by the generator.
3. The explanation of why the figure of a body effects its velocity.

Thus in the *De Caelo* we ought to distinguish five features:

(1) It is not *a prioristic,* nor metaphysical. Every feature of its theory is submitted to the ultimate test of conformity with observed facts. Even the theory of the perpetuity of motion is proposed because it is considered to be most in conformity with observation, and freest from metaphysical or gratuitous assumptions.

(2) It acknowledges the mathematical method in natural science not only as legitimate, but as a necessary instrument of physical theory.

(3) It not only acknowledges the necessity of what today is called "the hypothetical method" in science but employs it extensively.

(4) It makes use of all these methods in an attempt to give a genuinely physical-causal account of nature.

(5) It achieves some physical-causal knowledge which is *propter quid* according to the standards of Aristotle, even as regards the *details* of nature, e. g., the shape of the earth.

Modern science since Galileo tends to define its own method in terms of the first three of these features. To contrast modern science and Aristotelian science as if they were in disagreement on these three points is thus unhistorical. It is the last two which are specifically Aristotelian and which modern philosophers of science tend to reject as impossible of attainment. Even Thomists today tend to reject the last. Contemporary thinkers generally suppose that Aristotle's dream of understanding even the details of nature in the light of their proper causes was hopelessly ambitious.

This pessimism rests largely on the conviction that the history of the Aristotelian system is flat proof that such an ambition not only will lead to failure, but is an obstacle to the true development of science. If on the contrary we review this history,

distinguishing the features of Aristotelian science outlined above, a different perspective opens to us.

The "failures" of the Aristotelian system were precisely with respect to the first three points mentioned above, and with regard to these every scientific system, Aristotlelian, Ptolemaic, Cartesian, Newtonian or Einsteinian inevitably "fails." The process of gathering new facts, of finding mathematical and physical constructural systems which give a better and better approximation to these facts is endless, as everyone recognizes today. Aristotle's constructs did not fail merely because they eventually had to be replaced, any more than did Newton's. The great discoveries of the seventeenth century made necessary the replacement of Aristotle's dialectical theories not only in mechanics, but also in chemistry and biology. A study of the Stagirite's theory of the elements and his physiology show that they depend also upon the theory of the perpetuity of motion.[78] They did not invalidate the rest of his system, nor its fundamental viewpoint and methodology, any more than did the Ptolemaic system when it long ago replaced his astronomy.[79]

[78] In the *De Generatione et Corruptione* Aristotle attempts to show that the simple natural motions identified in the *De Caelo* on the assumption of perpetual motion are recognizable to us through the proper sensible qualities of touch, the hot and cold, the dry and wet. If this is the case, he argues, then the elementary characteristics of things are *directly* sensible to us. This gives rise to the attempt at a simple qualitative chemistry which turned out to be inadequate, since the elements we now know are not directly distinguishable in this simple qualitative fashion. From this, Aristotle was led in his physiology to develop a theory based on the idea that *heat* is the highest form of physical energy. This was the source of the curious mistake of locating internal sensation in the heart instead of the brain; he argued that as the central and highest power it must be in the organ with the highest energy, i. e., the organ with the most heat. Thus, all of Aristotle's most important mistakes (the ether, the stationary earth, the simple qualitative chemistry, the misunderstanding of the function of the heart) result not from *a priorism*, nor from poor scientific methodology, but from his basic working hypothesis of the eternity of motion, a hypothesis which he selected, as indicated in the text, because it seemed to attribute more to physical causality without direct recourse to divine causality.

[79] It is sometimes not realized that the system of Ptolemy universally

Nevertheless the rationalistic atmosphere of the seventeenth and eighteenth centuries which was impatient of distinctions between different types of knowledge [89] tended to regard the replacement of so much of Aristotle's system as a sufficient reason for disregarding it as a whole. Contemporary science pays the penalty, since it has inherited this same habit of univocity even as it has swung to the other extreme of anti-rationalism and to a despair of arriving at an intelligible account of nature. It tries to be content with controlling what it cannot hope to understand.

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used by astronomers from his time to that of Copernicus was *not* Aristotelian, but inconsistent with the whole physical system of Aristotle, since it did not conform to the basic physical postulate of that system: that the heavenly bodies move in perfect circles around the center of the universe. Thus, rigid Aristotelians like Averroes were absolutely opposed to it. Copernicus primarily overthrew Ptolemy, not Aristotle. It was Galileo's discovery of sun spots which dealt the death-blow to the Aristotelian ether.

[89] "The geometric spirit is not so exclusively bound to geometry that it could not be separated from it and applied to other fields. A work of ethics, politics, criticism, or even eloquence, other things being equal, is merely so much more beautiful and perfect if it is written in the geometric spirit." Fontenelle, Preface to *On the Usefulness of Mathematics and Physics;* quoted in E. Cassirer, *The Mind of the Englightenment* (Princeton, 1951) p. 16.

On Kant's Refutation of Metaphysics

by Edward G. Ballard

DID KANT, as he supposed, refute the classic metaphysics? This is a large topic; nevertheless, it may be useful to consider it briefly if the discussion be centered around a crucial aspect of his view of the matter. I propose, therefore, to single out an argument which has figured largely in the later Platonist tradition, an argument upon which, in Kant's view, the whole of rational theology was based, namely the ontological argument.

The ontological argument is not only theological in significance and value. Philosophers in the Platonic or idealistic tradition have with a sure philosophical instinct exploited its possibilities. Importantly involved in the evaluation of this argument is the problem of identifying the activity of mind on which it depends. The *bête noire* of any kind of idealism is the task of showing that some activity of mind is meaningful, in the sense that it can come into contact with something not itself by which truth can be measured. For without such clearly displayed relation to a stability beyond convention or individual mental vagary, an idealistic philosophy cannot convince itself that it has avoided the risk of subjectivism or solipsism. What else was the danger which Socrates saw in the attacks of the Sophists? What else is the significance of the *Theaetetus* or of the first part of the *Parmenides*? The later Academy succumbed to this danger; and St. Augustine, who had moved through a skeptical period himself, argues, in the *De Libero Arbitrio* and elsewhere, from truth in the mind to the being above mind in a manner not far removed from the ontological argument. However, St. Anselm, the second Augustine, elaborated the argument in its fully developed form, and thus seemed, either by means of the argument itself or in some more direct and intuitive way, to

have made contact not merely with a being independent of thought, but with the highest possible being, and the source of all others.

In a somewhat different way Descartes trod a similar path to a similar conclusion. Kant, however, was convinced that anyone who accepted this argument became the victim of transcendental illusion. Who, though, shall we conclude, were the real victims of illusion? In order to determine this question we shall first consider the ontological argument in relation to the kind of metaphysics which it propounds and defends, and the kind or kinds of knowledge which it assumes. We may then consider Kant's destructive attack upon this argument. Finally we should be in a position to estimate the nature and value of Kant's refutation and perhaps also to throw some light upon the significance of his revolution in philosophy.

To begin with it will be valuable to consider certain points of similarity and difference between the Anselmian and Cartesian formulations of this argument. Anselm distinguishes in the *Prosologium* between understanding that a sign refers to an object and understanding the object to which a sign refers. He claims that he understands God in the second sense. Obviously the word "God" is in his understanding in the first sense. But since God is the greatest conceivable being and this meaning is held to be understood in the second sense, and hence has *esse in intellectu*,[1] then it follows that God must also be admitted to have existence in reality (*esse in re*), for it is "greater" to exist in reality than merely *in intellectu*.[2] Thus Anselm is logically driven to the conclusion: "No one, therefore, who understands what God is can conceive that God does not exist."[3]

In response to Gaunilon's objections to this direct movement

[1] *Proslogium*, cap. IV, *Patrologia Latina*, Migne, CLVIII, 229.

[2] *Prosologium*, cap. II, *ibid.*, p. 228.

[3] *Prosologium*, cap. IV, "Ita igitur, nemo intelligens id quod Deus est, potest cogitare quia Deus non est." *Ibid.*, p. 229.

from an idea in the mind to assurance of the existence of its *ideatum,* Anselm provided two significant replies. When Gaunilon suggested that the argument proves too much, since by using it one might prove by appeal to concepts alone that the "greatest" member of any species, e. g., the most perfect island, must exist, Anselm replies [4] that he has not proved the existence of a being greater than all other beings; rather he has proved the existence of a being "than which a greater cannot be conceived." A conceivable being, evidently, may possibly exist. But such a greatest conceivable being is exceptional in that its status as a possibility is identical with necessary existence. And when Gaunilon raises the question whether any one, even a Christian, can really understand such a being, beyond merely accepting on faith *that* such a being exists, then Anselm appeals to Gaunilon as a Catholic. And when Gaunilon undertakes to doubt [5] that the definition of "greater" really extends one's understanding of God, Anselm writes "I call on your faith and conscience to attest that this [doubt] is most false." [6] Thus Anselm's whole point is that it is logically impossible to accept the Christian definition of God and at the same time to deny His existence. Anselm refers, in the *Prosologium,* to this sense of logical constraint or convincingness as an illumination. This illumination has two aspects: the first is the apprehension through faith of the *ens realissimum,* the second is recognizing the identity of the intelligibility (or apprehensibility) of this being with existence.

These points against Gaunilon are important, I believe, for they render it quite unmistakable that we have to deal here with an idea of a very special sort. It is not merely an ordinary concept; it is the concept of the "greatest" possible being, one whose intelligibility and existence are equivalent. This uniqueness is emphasized in Descartes' version of the argument in a

[4] *Liber Apologeticus,* cap. V, *Patrologia Latina,* Migne, CLVIII, 255.
[5] *Ibid.,* cap. VIII. [6] *Ibid.,* cap. I.

manner which helps to meet Gaunilon's objection more squarely. Consider the third Meditation:

> And one certainly ought not to find it strange that God, in creating me placed this idea within me to be like the mark of the workman imprinted on his work; and it is likewise not essential that the mark shall be something different from the work itself. For from the sole fact that God created me it is most probable that in some way he has placed his image and similitude upon me, and that I perceive this similitude (in which the idea of God is contained) by means of the same faculty by which I perceive myself. . . .[7]

That Descartes should have found the mark of God within him is scarcely unexpected. His allusion is clearly to the doctrine of the *imago*, the reflection of the Trinity in man, which he undoubtedly had heard discussed at La Flèche. More especially to be noted is his perceiving this mark in the same way or with the same faculty with which he perceives himself. This is as much as to say—to Gaunilon, for example—that the knowledge of God is already in the mind. It is not necessary to appeal to one's Christian faith; the philosopher has but to look into his mind with an attentive and clear vision and he will find there the major premise of the ontological argument. Then he writes, "I recognize that it is not possible that my nature should be what it is, and indeed that I should have in myself the idea of God, if God did not veritably exist. . . ."[8] Now this is a crucially important discovery. In knowing himself, Descartes at the same time knows not merely a contingently existing self but he also knows something else beyond himself, and not a mere something but a concrete and necessary being who serves as the foundation and guarantee for every other item of knowledge referring beyond the knower.

The difference between St. Anselm's and Descartes' arguments can be expressed in another way. St. Anselm's argument is evidently analytic; if one accepts the definition of God, then one

[7] *Objections and Replies*, II, p. 33. [8] *Meditations*, III.

may analyze out of this definition a necessary reference to existence. But Descartes' argument purports to go further. The idea of God is presented as the mark of God which could have been marked in the soul only by the existing God. Thus, this idea unites the *what* (the understanding or apprehension of God) and the *that* (the extra-conceptual being which is understood). It, like the *cogito,* can be represented only in a synthetic proposition which joins the concept of an essence with existence. But at the same time this synthetic proposition, which is clear and distinct or intuitively certain, is also a priori or necessarily true.

Descartes is clearly aware of the crucial importance of the ontological argument for his program in philosophy. The veracity of his concepts of the world, is based upon his intuitive grasp of the existence of himself and of the necessary existence and perfection of God. The unique character of these ideas is clearly indicated by their being termed innate. That is, the idea of God is an idea, a thought, but its being true does not depend upon our thinking or judging it to be true. Its very presence directly constrains the will to judge it to be true. Thus, the mere presence of this idea is proof of the existence of its referent. The mind, in admitting the truth of this conclusion, is being logically constrained by something other than itself, and thus it escapes subjectivism and solipsism. It is worth repeating that the intuitive grasp of the existence of God is a rather remarkable phenomenon.

It is evident, both in the case of St. Anselm and of Descartes, that the ontological argument is recognized to be something rather outside the usual run of philosophical arguments. Through it, St. Anselm laid claim to grasping a unique idea in an incontrovertible manner. It is an illumination.[9] Similarly,

[9] *Prosologium,* cap. IV. St. Anselm adopted without significant change the Augustinian doctrine of illumination according to which the apprehension of a truth is an insight into the mind of God, an "interior illumination of a unique sort" (Augustine, *De Trinit.,* XII, 15). Certainly there are vast differences in degree among kinds of knowledge—compare mathematical

Descartes seizes on this innate idea as an undeniable discovery of that part of his being which related him to the rest of the universe. Descartes terms this an intuition. What, more precisely, does this term intend? For Descartes, and for the tradition which he represents, 'intuition' refers not to a special act of knowing or to a special kind of knowledge, but rather to a way of knowing. It bespeaks a superlative degree of clarity and convincingness.[10] Self-evidence, a persuasiveness which does not require that one go beyond the immediate presentation in order rationally to accept or reject, is a customary meaning of the term. For Descartes, all other evidence for truth is reducible finally to this one. In holding this view, Descartes is in thorough agreement with the more recent part of the tradition which he represented, for the rationalists tended to regard knowledge as a continuum. Its different levels were held to differ not in kind but in terms of more or less. Thus the senses presented the mind with inadequate ideas, but these are still ideas; they contain truth and become adequate concepts in consequence of being clarified and related to other concepts. An idea which is intuitively apprehended is an adequate idea which is indubitably recognized to be such.

In respect to the intuitive certainty of the conclusion of the ontological argument, St. Anselm and Descartes are quite in agreement with each other. Both regarded the argument, it seems, as a means for eliciting the clear recognition or intuition of the truth of a true idea. They differ mainly in respect to the locus of the major premise of the argument. St. Anselm regards

insight to knowledge derived from the senses. But it is doubtful that Augustine (or Anselm) held to the existence of essentially different kinds of knowledge. All comes from the Teacher teaching within. Cf. Augustine, *De Magistro*.

[10] *Regulae*, III and IV; *Discourse*, II. This kind of intuitive evidence is illustrated by the way, as Descartes points out (*Regulae* III), in which one apprehends an equivalence. If it is stated that A is equivalent to A, it will become at some point absurd to continue to explain that this is so. One just has to look at or intuit the relation for himself.

the mind, Platonically, as a kind of eye which can see or be illuminated by a truth which is, as it were, outside the mind. Descartes finds the true idea, in this instance, within the mind, as part of, or as definitory of, its very nature.

When Kant wrote his discussion of the ontological argument, he had Descartes' version of it specifically in mind. He proposed to determine whether, in discovering this remarkable idea in the storehouse of his mind, Descartes was dreaming or not. I am convinced on two counts that Kant's criticisms fail to destroy the ontological argument; for (1) the kind of metaphysics which he attributes to its proponents was not the kind which they actually held, (2) the kind of intuition which he attributed to them was not that to which they laid claim. Thus, although Kant may have destroyed one type of metaphysics, this does not seem to be that which he professed to attack.

It is at least certain that Kant attributed great importance to the ontological argument. In fact he held that any argument for the existence of God must be completed by this ontological step.[11] One can imagine him recalling the usual Q. E. D. with which St. Thomas concludes each of his five cosmological proofs. This conclusion is (approximately): "And this all men speak of as God."[12] Kant might have asked, suppose all men were mistaken? Suppose, for one thing, that there were no experienced world, nothing more than the appearance of movement—and such a supposition is possible—then the cosmological proofs could not have a real beginning. It would be possible, then, that this which all men called God would be merely the deceiving demon of Descartes' imagination. To assure himself against this inadvertency, the proof must move a step beyond the cosmological conclusion. The being that is the first mover, the first cause, and governor of the world, must be shown also to be the greatest

[11] *Critique of Pure Reason*, transl. N. Smith (London, 1933) A-607; A-629.

[12] *Summa Theol.*, I, 2 ad. 3. I do not believe the variations from this phrase to be significant in this regard.

and most perfect being, the *ens realissimum*. But the latter phrase expresses the generally received definition of God. Accepting this definition, we merely add that the being which includes all reality must also include existence. Thus the most real being necessarily exists. This last additional step is, of course, the ontological argument. Without it, the other arguments cannot reach their conclusion. Therefore, in destroying it, Kant held that he was destroying not only the possibility of moving from the mind directly to the perfect being beyond the mind, but all rational theology as well.

The Kantian refutation of this argument in the respects in which it differs from Gaunilon's, is simpler than his complex expression of it in the transcendental dialectic. He points out that the proposition "God exists" or "God is an existent thing" is either analytic or synthetic.[13] That is, it represents either an explicated concept, or the relation of two concepts. He then shows that on either count the proposition can be denied without contradiction. For if it is an analytical proposition, the whole, i. e., both subject and predicate, can be rejected without self-contradiction. And in any event an analytic proposition can tell us nothing not already said in the subject. And if the proposition is synthetic, the predicate can likewise be denied without contradiction. The point of the latter observation is carried home by his noting that "is" does not mean "exists" but serves merely to relate subject and predicate in a proposition. Or if existence appears to be thought in the predicate, it must be understood that existence is really not a predicate at all, for it adds no new determination to the subject but merely places the subject in a certain (i. e., experiential) relationship with the knower.[14] On no count, then, does Kant find that he is logically

[13] *Critique of Pure Reason*, A-597 ff.

[14] *Ibid.*, A-600-601. In the Anselmian or Cartesian versions of the ontological argument, the term 'existence' may be said to bring the knower into cognitive relation with a being, and in this instance, a being whose intelligibility and independent reality mutually imply each other. This

constrained to admit the conclusion of the ontological argument. In other words, beginning with thought and making use only of the logical instruments and techniques of thought, one cannot prove that he ever gets beyond thought. Is, then, the idealist condemned to subjectivity? At least, Kant lays claim to having shown in one more instance that the mind has no knowledge of suprasensible entities which are completely different in kind from its own (conscious) experience. This is one more point in favor of Kant's general polemic which argues that the mind knows nothing which is *in se* and entirely independent of the knowing mind. He regarded the whole of the classic metaphysics as directed toward acquiring knowledge of such independent entities. His polemic may be regarded as developing in detail Zeno's suggestion (*Parmenides,* 134) that, if men and gods occupy independent realms, then men cannot know the gods nor can the gods know men. This is tantamount to an entire rejection of the intermediaries which Plato in the later dialogues endeavored to construct between empirical and nonempirical objects and which were to render conceivable a continuous gradation in kinds of being and to render possible, by means of this linkage, a continuous development in knowledge of the same.

We may now ask whether Kant's criticism completely destroyed the ontological argument, as is frequently assumed. If so, in addition, does his own idealism fall within the sweep of his refutation?

It has seldom been recognized how far Kant's refutation fails to reckon with the purpose and the intended force of the ontological argument. The force of his refutation is derived from the assumption that the metaphysics which he was attacking divided being into two radically different and mutually

point is informatively discussed, and its connection with the Kantian criticism indicated, by Fr. G. Miller in "The Ontological Argument in St. Anselm and Descartes," *The Modern Schoolman,* XXXII (1954) 341-349 and XXXIII (1955) 31-38.

exclusive realms: the sensible and the suprasensible. And he believed that knowledge of the suprasensible, according to the traditional epistemology, was acquired through a special operation of the soul, or a kind of (mystical) intuition. Were the argument caught in this web of dichotomies, its fate would be quickly sealed. There is a question though, whether the argument as traditionally intended gives him any grounds for using this technique.

Anselm's argument moved from *esse in intellectu* to *esse in re*. These are not two completely heterogeneous things; both are *esse*. Although as a Christian, Anselm would hold to a distinction between the being of the natural realm and that of the supernatural as well as to that between the being in the mind and the being beyond the mind, yet these distinctions are not dichotomies. These " realms " are not mutually exclusive. The doctrine of the Trinity, creation, the image and the trace, maintain that the other realms are derivative from and bear a resemblance to the suprasensible. This resemblance of the world to God lies in the trace of the creating Trinity in the objects of creative workmanship.

The same is true in the case of Descartes. His recognition of the idea of God as the mark of the workman upon his product evidently alludes, as already suggested, to the same *imago* doctrine. In addition Descartes, it will be recalled, refers to God, mind, and body as substances.[15] These substances differ in terms of dependence and independence, but they are not completely unlike in kind; all are substantial. For both philosophers this resemblance—this analogy among the different kinds of being—provides a medium of contact with the suprasensible in virtue of which the mind may move to some knowledge of the latter. To these centrally important doctrines, Kant gave scant attention. He attends to the transcendence of the suprasensible, but not to its immanence.

[15] *Principles*, I, A. T. VII, 24 ff.

In sum, Kant interprets the classic metaphysics as referring to a suprasensible realm altogether isolated from the natural realm. Perhaps his criticism does destroy such a metaphysics. However, my point is that this is distinctly not the classic metaphysics, which holds to no such sharp disjunction between levels of being. On the contrary, the older philosophers attempted to bind together the kinds of being by means of intermediating concepts. Kant might have subjected these mediating concepts to attack, for they are not easy to grasp or defend. However, in so doing, he might have endangered certain of his own linking concepts such as the imagination (as used in the analytic) or the will (as used in his ethics) and thus he might have undermined his own doctrine.

Kant's rejection of the metaphysics which he attacked also followed from his own epistemology and his misconception of intuition as others had understood it.

In Kant's language "intuition" refers to a (prehensile) act of the mind by which the mind acquires the matter for knowledge.[16] He rejected intuition in any sense other than sensitive intuition. It is easy to see why he did so. He describes Platonic insight into ideas as "the assumption of a community of intellect with the original source of all things real,"[17] and rejects this assumption. Elsewhere he terms such community of intellect "intellectual intuition" and argues that its assumption contradicts the obvious distinction between the possible and the actual.[18] In other words if intuition is an act by which something is given to the mind, then intellectual intuition (i. e., intuition by the intellect) would seem to be giving the object conceived to

[16] "Every thought must be brought back, either directly or indirectly by means of certain indications, to intuitions (auf Anschauungen), that is to our sensibility, since there is no other means by which objects can be given to us." *Critique of Pure Reason*, A-19. Note also A-50.

[17] *Critique of Judgment* (Oxford, 1952) II, p. 363. Note also his interpretation of Plato in *Critique of Pure Reason*, A-4, A-568 ff.

[18] *Critique of Judgment*, II, p. 402.

the mind by means of that very conception.[19] The very act of conceiving of a possibility would at the same time render it actual. Certainly to lay claim to being creative merely by an operation of the mind would be to commit the error of Adam—clearly the height of sophistry. Thus by definition, the hypothesis that men possess intellectual intuition becomes ridiculous. It is hardly surprising, considering the implications of his new definition, that he should regard the whole ontological argument as *einer ganz willkührlich entworfenen Idee.*[20]

St. Anselm's illumination concerning the greatest possible being and Descartes' innate idea of God seemed to Kant to be of the nature of nonsensitive intuitions. They might as well be termed intellectual intuitions. He had no patience, therefore, with Anselm's claim to infused knowledge [21] of the being whose essence is to exist, nor did he submit this notion to examination.

Kant seems also to have missed the usage of "intuition" as referring to clarity or self-evidence and to have confused this meaning with his own very different notion of intuition as the act by which data are given to the mind. Consequently he rejected such claims. In his vocabulary "intuition" does not refer to a way of knowing nor does it express a certain quality of a concept in virtue of which the concept is very clear, persuasive, unrejectable. Rather the term "intuition," whether pure or empirical, is Kant's name for contact with the object of knowledge; and it denotes the operation in consequence of which the mind is presented with a knowable object.

Thus no doubt Kant destroyed the doctrine of a suprasensuous reality which is altogether discontinuous with the natural world and which is supposed to be known by way of a rather mystical intellectual intuition. The conclusion of the present paper, however, is that Kant did not destroy the traditional kind of metaphysics and epistemology; rather he demonstrated that he had

[19] *Ibid.*, II, p. 406 ff. [20] *Critique of Pure Reason*, A-603.
[21] Compare his own definition of faith, *Critique of Judgment*, II, p. 471.

misapprehended essential elements both in the epistemology and metaphysics of the position which he opposed.

Two points ought now to be noted which serve to blunt the sharpness of Kant's break with the tradition in philosophy. The first has to do with a relation, obscure perhaps, which serves to connect his own doctrine with previous beliefs. The second concerns his conviction about the importance of rational theology, and the ontological argument in particular.

The first point is the suggestion that Kant could not have rejected out of hand the whole notion of innate ideas, for his own doctrine of the nature of the mind is by no means radically different from it. The result of his transcendental analysis is to reveal the a priori forms of the understanding by virtue of which it can entertain and relate concepts having an existential reference. The innate ideas, as Descartes understood them, are thoughts "imprinted on the human mind." They have a characteristic form [22] and provide the beginnings for our thought [23] about the external world. One might almost suspect, although the sleight of hand may seem to be too facile, that the a priori structured mind of Kant's doctrine is merely a single, enlarged, and active Cartesian innate idea whose function it is to synthesize the categoreal predicates with the (existing) objects in experience very much as the undeceiving God had guaranteed the reference of mathematical concepts in Descartes' mind to extramental substance. At any rate the two doctrines are not dissimiliar, and Kant might well have recognized in the older one the beginning of his own. He avoids, therefore, in his attack on the ontological argument, destroying this crucial doctrine. At

[22] "L'idée de Dieu *soit tellement emprainte en l'esprit humain*, qu'il n'y ait personne qui n'ait ensoy la faculté de le connoistre." Ltr. à Clerselier, Adam and Tannery, IV, pp. 187-8, italics the author's. Cf. *Regulae*, IV.

[23] "Habet enim humana mens nescio quid divini, in quo prima cogitationum utilium semina ita inacta sunt, ut saepe, quantumvis neglecta et transversis studiis suffocata spontaneum frugem producant." *Regulae*, IV, A. T, X, 373.

least he accepts this minimal statement: that the mind must possess something given both in respect to matter and in respect to form before the knowledge process can begin.[24]

In fact, if the comparison between the Cartesian innate ideas and the a priori structured understanding be acceptable, it will also appear that Kant has followed a pattern in his thinking which is quite close to Descartes' in an additional respect. As the latter reasoned from the awareness of an innate idea of God to the existent being, so Kant's transcendental deduction moves from the categoreal structure of the understanding and imagination to the structure of the phenomenal world. His objective is to prove that the world as known through concepts is the same world which is intuited under the forms of space and time. It is also important to recall that the categoreal structure is not a merely abstract being of the reason; it is not a set of empty classes for a general logic. A category of the understanding might be described as a logical category *plus* a reference to phenomenal existence.[25] The analysis of this categoreal structure, therefore, provides Kant with a logic of existence or a transcendental logic. He is thus assured that concepts of the mind which apparently refer to the experienced world may actually do so. Thus his idealism is saved from solipsism. For his philosophy, the transcendental deduction performs a function similar in this respect to that performed by the ontological argument for Descartes' by bringing the mind into cognitive contact with something not itself—even though one argument terminates in God and the other in experiential being. In this way Kantian idealism is saved from the charge of subjectivism in the pejorative sense.[26] Appropriately he ends with a philosophy of experi-

[24] Kant, of course, does mention the doctrine of innate ideas and rejects it, e.g., *Prologomena*, 36. He does not, however, offer any serious and detailed criticism of it, and in my opinion, he does accept the weakened form of the doctrine.

[25] *Ibid.*, A-76 ff.; also A-600.

[26] Kant may not have successfully escaped paradox on this score. The

ence which entails a doctrine of phenomena in sharp contradistinction to noumena. Experiential knowledge then becomes the criterion of (knowable) reality,[27] just as theology provides the criterion of reality for an Anselm or a Descartes.

A second point to consider in evaluating Kant's critique of metaphysics is that he does not conclude, from his refutation, that rational theology should be altogether consigned to the flames. For in the first place he recognizes that this theology was produced in answer to a very real demand. "No one would have sought in this direction" he writes, "were there no need of our reason (Vernunft) for admitting the existence in general of something necessary to which one might ascend and find rest." [28] The mistake, according to his view, lay in taking the conclusion of such a theological argument as literally and objectively true. The transcendental deduction does not legitimize this conclusion. But, he adds, the notion of a necessary being may be accepted as a subjective principle of the reason, a regulative principle which cautions us "so to philosophize on nature as if there were a necessary first cause for everything in existence, if only in order to bring systematical unity into our knowledge." [29] Evidently, then, the ontological argument is the disguised form of an heuristic principle which belongs not to ontology but to epistemology. In this manner the sphere of religion is swept clear of reason in order to be kept pure for faith; the supreme being as discovered by the philosophical theologian is no longer the actual being in whom the religious

question is whether sensations are given to the mind's receptivity totally without form or not. If they are given entirely without form—as the merely passive material of knowledge—then it would seem that they could receive any form whatsoever; hence, whatever form was imposed on them by the mind would be imposed arbitrarily. This is the impositional interpretation which Kant wished to avoid. On the other hand, if sensations are given to the mind with some form and order of their own, then his idealism would have to be relinquished. E. Boutroux makes this point quite clearly, *La Philosophie de Kant* (Paris, 1926) p. 102.

[27] *Ibid.*, A-492 ff. [28] *Ibid.*, A-603. [29] *Ibid.*, A-616.

man places his trust and with whom the saint enters into friendly intercourse; it is an ideal of systematic unity which guides the investigations of the philosopher and scientist.

Just at this point, I think, the significance of the Copernican revolution in philosophy can be most clearly seen. It is not merely a matter of liberating epistemology (and hence both science and theology) from a näive realism and from anthropomorphic accretions. It involves a reorientated attitude toward the whole man. It consists in a re-evaluation of certain experiences, which may or may not be cognitive, but which cluster about a man's awareness of himself, of the other persons, of life itself. Evidently these experiences involve the human psyche to a greater degree or to a greater depth than do most others. The "intellectual intuitions" which led an Anselm or a Descartes to propound the ontological argument and to remain convinced of the literal truth of its conclusion are at least signal, and historically informative instances, of the existence of such experiences. Before Kant's time these powerful convictions or ideas which so intimately involved men and their fate were prized as beacons which illuminated the hesitant movements of human history. After Kant their status changes radically. It is true that Kant's transcendental analysis of sensibility and understanding indicated that the phenomenal world was, as it were, made in the image of the a priori factors of the human mind. Moreover, the analogy of the artist, he continued to hold, provides useful suggestions for organizing our knowledge.[20] But such analogies, even though they may seem to be intuitively certain, do not have the status of knowledge. "Knowledge" is a term strictly to be confined to the factual and theoretic understanding of experience. Obviously this enhanced evaluation of the discursive understanding of nature, as compared with more

[20] They are mentioned in his discussion of the physicotheological proof, especially A-626 ff. Note his use of "symbolic anthropomorphisms" in *Prologomena*, 57 which, he specifies, concern language only and not objects. Note also the whole drift of *The Critique of Judgment*, part II.

immediate and intimately human insights, is a standpoint to which the modern world was rapidly making its own way. Perhaps Kant merely taught the world what it wanted to learn. The movement since Kant has clearly gone wholeheartedly in the direction of his, as it now appears, conservative gesture.[31] Thus the real effect of the Copernican revolution in philosophy is that the data, the analogies, and the concepts which are derived from and refer to what we may call the whole man and which concern the concrete human being, his feelings and conflicts, his destiny, are devaluated in comparison with the data, analogies, and concepts which are useful for elaborating the sciences of nature.

Kant is in the position of an idealist who has excluded from consideration—or at least who has radically re-evaluated—a class of evidence which idealists were accustomed to draw heavily upon and for which they were frequently commended even by philosophers of other persuasions. Whatever his very obvious success in rectifying the epistemological excesses and defects of his day and in placing the natural sciences on a more secure footing, his doctrine of man and his evaluation of certain typically human experiences seem not to be satisfactory. The consequences of his attempt, remarkable though it is, to re-establish what we may call his humanism on a basis of postulates,

[31] This significant effect of the Copernican revolution may be expressed in another way. A primary distinction in traditional metaphysics is that between substance and attribute. Consider some of the notions which cluster about substance. All things, including men are substances having natures. The analysis of any substance is made in terms of the four causes. Recall the connection of the four causes with the activity of the artist. Recall also the etymology of the term "nature,"—it comes from the Latin *nascor*, "to be born." Evidently birth is the original analogue of movement and change. These Aristotelian terms are designed to allow a wise and fruitful application to human as well as to nonhuman entities. . . . In Kant however, the distinction between substance and attribute lies within the knower's a priori categories. And the meaning of substance is restricted to the notion of permanence in time, a form in which the mind organizes its materials in such fashion that finally a physics can be constructed. Thus substance is stripped of its organic and anthropomorphic connotations and loses its primary status.

feeling, and faith, has not been completely happy. The romantic era which followed him and which tried with such uncertain success to build up an idealist defense of human values upon the foundations which he had left may, perhaps, be construed as evidence in favor of this view.

Certainly the consequences of Kant's criticism have been upsetting. How are they to be evaluated? For it is always appropriate to criticize the criticism. Are the intuitions upon which Descartes or Anselm relied for the beginning of thought to be put aside as metaphysical dreaming? If so, why? The problem concerns nothing less than the relation of the person of human experience to the nature as described by the sciences. This problem had, of course, already emerged quite disturbingly in Kant's writings as the antimony of nature and freedom and became, perhaps had always been, the focal point of his concern. Undoubtedly it is the most pressing of modern problems whether regarded practically or theoretically. And I suggest that the only way properly to approach it is to make a new assessment of the various kinds of evidence—primarily the personal and the scientific—which may have a bearing upon its treatment. Without this criticism of the older criticism, we cannot begin. Any attempt to treat this matter, however, must come to terms with a difficulty which appears at the outset. From what point or points of view will the two classes of presumptive evidence be evaluated? If the kind of evidence which those philosophers accepted who formulated and used the ontological argument be evaluated by the modern scientific and empirical standards, then the verdict is too obvious to be worth drawing. It is comparable to the verdict which St. Augustine might pass on the value of physics for salvation, or that which Wordsworth might pass upon botany as a means to achieving that contact with nature which he desired.

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From the Secretary's Desk

Annual Association Meetings

BY THE TIME this column appears, the Thirty-Second Annual Meeting of the American Catholic Philosophical Association at Hotel Sheraton-Cadillac in Detroit, Michigan, on April 8 and 9, 1958, will have been completed. The secretary very much hopes that he will have the full cooperation of the speakers in the prompt filing with him of copies of their papers for publication in the annual Proceedings. If this is done, the Proceedings should be ready for distribution by the late summer. Contributors desiring offprints of their articles should notify the secretary. The printer will provide those requesting offprints with an estimate of the cost of the same.

The Thirty-Third Annual Meeting of the Association will take place on Easter Tuesday and Wednesday, March 31 and April 1, 1959, at Hotel Statler, New York City. This hotel was selected because it will give the members of the Association the best fixed room rate in view of the meeting room facilities required by our annual meetings. The management of the hotel guarantees a fixed $8.00 rate to all members of the Association for a single room with bath, with double room with bath at $12.00. Members of the Association will as usual receive invitations to volunteer to give papers at the afternoon sectional sessions of the meeting on suggested subjects which will be indicated in the invitation. Those volunteering should send a summary of not more than 150 words directly to the chairman of the section for which the paper is volunteered not later than October 15, 1958. The various chairmen are asked to make the final decisions as to the papers which will be read and to file the summaries of these papers with the secretary of the Association not later than October 25, 1958, for publication in the January 1959 issue of The New Scholasticism. The letters of invitation to all members will be sent out about May 15.

Twelfth International Congress of Philosophy

The Twelfth International Congress of Philosophy will take place in Venice, Italy, (with one meeting in Padua) between September 12 and 18, 1958. The work of the Congress will be organized in Plenary

Sessions and in Special Section Meetings. Members may be: either *Active,* who have the right to send in a paper, to take part in the discussion and other activities of the Congress and to receive the printed Proceedings; or *Associate,* who may take part in all the activities of the Congress, but may not send in contributions nor have the privilege of the floor, and will not receive the Proceedings.

The Organizing Committee has suggested three themes for the Plenary Sessions: 1) Man and Nature; 2) Freedom and Value; 3) Logic, Language and Communication; these themes may be dealt with either from an historical or from a conceptual viewpoint. The following professors, invited by the Committee, have accepted to send in reports that will serve to introduce the discussion: for Theme I: Professors Philipp Frank of Cambridge, Mass., Johann Lotz of Pullach (Munich), M. B. Mitin of Moscow; for Theme II: Professors Miguel Reale of Sao Paolo, Aloys Dempf of Munich, R. McKeon of Chicago, A. Munoz Alonso of Valencia; for Theme III: Professors A. J. Ayer of London, Ch. Perelman of Brussels, Aimé Forest of Montpellier. The texts of these reports is in the press and will be sent to all those who have enrolled or will enroll as active members and have paid or will pay the enrollment fee.

Those wishing to take part in the discussions, with reference either to the texts of these reports or to the suggested themes, should send in the complete text of their contribution (Not more than 250 typewritten lines of 65 spaces, followed by a résumé of 15 lines) within and not later than April 30, 1958; the presiding committee will appoint the members who are to speak. During the last Plenary Session dealing with each subject the results of the discussion will be summarized.

Contributions having no special reference to the themes suggested by the committee will also be accepted. The presiding committee will group these according to the various subjects, and they will be presented and discussed in the Special Section meetings. One of these sections will deal with: "Aristotelianism in Padua, Its Connections and Developments"; another: "Eastern Philosophies and Western Thought." The texts of these contributions not pertinent to the themes suggested by the committee are subject to the same limitations as are the others, and should also be sent, with their résumé enclosed, not later than April 30, 1958. Also those contributions that concern the themes of the Congress and which the committee has been unable to place in the Plenary Sessions, will be presented and discussed in the section meetings. Priority in the discussions will be given to those members who have

sent in contributions, but subsequently any active member may ask for the floor.

Contributions may be in Italian, French, English, German or Spanish; upon the termination of the Congress these will be published in the proceedings. A member may not send in more than one contribution, and may also request that his contribution should not be presented for public discussion.

The day before the opening of the Congress, in Padua, there will be a symposium on phenomenology, sponsored by the Archives-Husserl of Louvain (Professor H. L. Van Breda); and on the day after the end of the Congress the following symposia will take place in Venice: on aesthetics, sponsored by the Societies of Aesthetics (Professor Luigi Pareyson, Istituto di Estetica, the University of Turin); on Humanism and Symbolism, sponsored by the Centro di Studi Umanistici (Professor Enrico Castelli, Istituto di Studi Filosofici, the University of Rome).

Professor Felice Battaglia of Bologna University, president of the Italian Philosophical Society, is president of the Congress. Professor Carlo Giacon, of Messina University, secretary of the Center of Philosophical Research, Gallarate, is secretary. The address of the Secretariate is Via Donatello 16, Padua, Italy.

International Congress of Medieval Philosophy

The International Congress of Medieval Philosophy will be held at Louvain-Brussels, Belgium on August 28 to September 4, 1958. Our Association will be represented by Dr. Vernon J. Bourke, professor of philosophy at St. Louis University and a past President of the Association, who will also be official delegate to the International Congress of Philosophy. The general theme of the Congress will be "Man and His Destiny According to the Thinkers of the Middle Ages." During the Congress, plenary morning sessions will consider five topics relative to the general theme: 1) "Nature of Man and Human Personality" by Professor M. R. Klibansky of McGill University; 2) "The Human Situation—Corporeality and Temporality" by the Rev. M.-D. Chenu, president of the Thomist Society of Paris; 3) "Knowledge and Truth" by Professor M. P. Wilpert, University of Cologne; 4) "Tendencies, Will, Liberty" by Professor Vernon J. Bourke, St. Louis University; and 5) "Moral and Social Values" by Professor M. M. de Gandillac of the Sorbonne. Sectional meetings will be held in the afternoon on various problems. Reports on medieval studies and research will be made by Professor F. Van Steenberghen, M. Giele, G. Verbeke, and

H. L. Van Breda. The president of the Congress is Professor L. De Raeymaeker of Louvain University and the secretary is Suzanne Mansion. Address of the secretary is University of Louvain, Higher Institute of Philosophy, Centre de Wulf-Mansion, 2, place Cardinal Mercier, Louvain, Belgium.

Chartered Plane Offering for European Travel

The Arne Jenson Travel Bureau has offered to provide a round trip air rate of $364.00 per passenger from New York to Rome or Milan provided eighty passengers could be obtained. If any group of members is interested, the secretary will be glad to give further assistance in the arrangement for a chartering of a plane.

Regional Meetings

The New York Regional Meeting of the Association held its October meeting at Iona College, New Rochelle. Dr. William E. Carlo of St. John's University read a paper on "Being in St. Thomas." The December meeting was held at the Long Island Division of St. John's University at Jamaica, with Dr. Thomas S. O'Brien also of Iona College speaking on "The Approach to Metaphysics on the Undergraduate Level." The February meeting was addressed by Sr. M. Jeannette, S. C., on "The Teaching of Philosophy: An Appraisal."

The Western New York Conference of the Association met at Rosary Hill College in Buffalo on October 19. Rev. Stephen Gerencser spoke on the subject "A Comparison of Traditional Western and Oriental Ethical Systems." The Spring meeting was held on March 22 at St. Bonaventure University as part of the centennial celebration of the University. Rev. John M. Kelly, C. S. B., of St. Michael's College, Toronto, was elected chairman and Miss Wanda Lewis of Rosary Hill College, Secretary.

The Maryland-District of Columbia Conference held its Winter meeting at St. Mary's Seminary on November 1, in Baltimore. Rev. Thomas FitzGerald, S. S. J., from St. Joseph's Seminary, Washington, D. C., spoke on "The Relations Between Philosophy and Theology." The annual St. Thomas Day meeting was held at Trinity College on March 13 with Dr. Rocco Porreco of the department of state leading a discussion on "Contemporary Attitudes toward Philosophy."

The Illinois-Indiana Conference met at De Paul University in Chicago on December 7 for a panel discussion on "Cartesian and Thomistic

Man." The panelists were Dr. Donald Gallagher of Marquette University, Dr. John Bannon of Loyola University, and Dr. Herbert Lamm of the University of Chicago. Rev. Dr. R. W. Mulligan of Loyola University has been elected chairman.

The San Francisco Regional Conference held monthly discussions from October to April on the general theme "Thomism and Modern American Philosophical Movements." The successive monthly meetings took chapters of Jarrett and McMurrin's *Contemporary Philosophy, a Book of Readings* as their source book. The modern and contemporary philosophers discussed were DeWitt Parker, C. D. Broad, G. E. Moore, John Dewey, Bertrand Russell, Gilbert Ryle, Stephen Pepper, Rudolf Carnap, Moritz Schlick. A general public meeting was held at the University of San Francisco on November 29. Rev. George V. Kennard, S. J., of University of Santa Clara, spoke on "Reflections on William James and the Prospects for Metaphysics" at the morning session. Dr. John Thomas of the San Francisco College for Women was the afternoon speaker. His subject was "The Problem of Induction in Logic."

The East Central Conference of the Association met at Our Lady of Angels Seminary, Cleveland on November 10. The speakers were Rev. Leonard Paskert, O. F. M., of the Seminary and Dr. Robert E. Mason of Western Reserve University, the former speaking on "Man's Knowledge of God in St. Bonaventure" and the latter on "Some Secularist Stereotypes of the Scholastic Philosophy of Education." The Spring meeting on March 22 at Our Lady of Cincinnati College had Rev. Joseph Wulftange, S. J., on "Science and the Philosophy of Nature."

Miscellaneous Items

The 1957 McAuley Lectures of St. Joseph College, West Hartford, Connecticut, are now available for distribution. The theme is "Some Aspects of History" and contains the Lectures of (1) Professor George Cooper of Trinity College on "History, Its Limitations and Its Promise"; (2) Professor Ross Hoffman of Fordham University on "Catholic Philosophy of History"; (3) Professor Friedrich Engel-Janosi of Catholic University on "Toynbee and the Tradition of Universal History." Copies of the Lectures are obtainable at the Office of Publications of St. Joseph College at $1.00 a volume. Previous volumes are on the subjects: "Truth and the Philosophy of Teaching" 1953; "Christian Humanism in Letters" 1954; "Group Understanding" 1955; "Advances in Science through Culture" 1956.

The Philosophy Department of Loyola University in Chicago sent

a form letter to all the schools of the city asking the principals to encourage their students to attend a philosophy symposium for high school seniors sponsored by the Department. Forty-eight schools responded, sending 300 students. Eighteen of the schools represented were public schools.

The attention of our membership is called to the Summer Seminar in philosophy to be given August 4-15, 1958, by Fr. Lonergan of St. Mary's University, Halifax, Canada. Arrangements for attendance at the Seminar may be made with the Rev. M. J. Belair, S. J., vice president of St. Mary's University who will also send a detailed program of the lectures to those interested.

Congratulations and best wishes to St. Bonaventure University on the occasion of its centennial year. We salute also the former associate editor of THE NEW SCHOLASTICISM, the Rt. Rev. William J. McDonald, upon his appointment as rector of the Catholic University of America.

The Rev. Dr. Ernest Kilzer, O. S. B., of St. John's College, Collegeville, Minnesota, has concluded a series of half-hour television lectures entitled "Getting Acquainted with Philosophy," presented over the new educational television station KTCA-TV in St. Paul, Minnesota. The lectures were given on Mondays and Fridays from 8:30 to 9 p.m. beginning last September. The series was meant as a general introduction to philosophy beginning with Greek thought and coming down to the present day philosophies of pragmatism, logical positivism, and existentialism. The series was completed just before Christmas. Next fall, Fr. Kilzer will begin a new series on the history of modern philosophy, beginning with Descartes and coming down to the present. It is very likely that the course will be accepted for two hours of scholastic credit for students in Minnosota private colleges. The TV station has a Private College Hour, Monday through Friday, from 8 to 9 p. m., in which the fourteen private colleges of the state take part with various kinds of courses and with lecture series.

The Philosophy Commission of the National Federation of Catholic College Students sponsored a Philosophy Symposium at Manhattanville College of the Sacred Heart, Purchase, N. Y., on March 23, 1958. The Rev. Martin D'Arcy, S. J., spoke on "Philosophy in the Formation of Citizens" and Prof. Yves R. Simon spoke on "Liberal Arts Education and the Common Good."

CHARLES A. HART,
National Secretary

Catholic University of America,
Washington, D. C.

Aristotle on Truth-Value: A Corrigendum

by Jason Xenakis

In my article, "Aristotle on Truth-Value" which appeared in this Journal, (XXXI [1957] 538-547) there is one correction in particular which the editors kindly allowed me to make now in this note. In the second paragraph of p. 544 of the article, "In fact, Aristotle himself, in the midst of saying the above about Cleon, lapses into probability-language. Thus, while . . .," should read: "In fact, Aristotle himself lapses into probability-language while. . . ." Also what follows "*De Anima*, 430b5" in footnote 18 should be stricken out; and in footnote 19 "*Ibid.*" should be replaced by "*Peri Herm.*" And my criticism of Aristotle in the paragraph in question should not be thought to apply to everything he says about truth-value in the "sea battle" passage (esp. *Peri Herm.*, 19a35 ff.) since—in contradiction to the Cleon passage—he allows at least some predictions to be neither true nor false.

Louisiana State University,
Baton Rouge, Louisiana

Notes on the Authors

Dr. Richard J. Connell, *who teaches philosophy at Marquette University, is a graduate of Laval University and has previously contributed to* The New Scholasticism.

Rev. Ramon A. di Nardo *is a graduate of the University of Notre Dame and of the Catholic University of America. He is a chaplain at St. Elizabeth's Hospital, Washington.*

Rev. Benedict W. Ashley, O. P., *is a member of the Albertus Magnus Lyceum for Natural Science and has taken a leading role in the curriculum studies of St. Francis Xavier College.*

Dr. Edward G. Ballard, *who teaches philosophy at Tulane University, has previously contributed to learned journals, including* The New Scholasticism.

Book Reviews

The Language of Value. **Edited by Ray Lepley. New York: Columbia University Press, 1957. Pp. viii + 428, with index. $6.50.**

This symposium is a sequel to a previous one published in 1949 under the same editorship and entitled *Value: A Cooperative Inquiry.* Unsettled issues of the former volume suggested the material for this one. Philosophers whose writings showed interest in semantic or linguistic problems about value were invited to submit questions, which after combination by the editor were resubmitted to the participants, who then wrote constructive essays on one or more of these issues and commented on each other's essays.

The plan of organization is a brief introduction setting forth the four issues: (1) the functions performed by signs, (2) the distinction of valuative and factual signs, (3) the presence of emotive elements in valuative terms, (4) the interchangeability of factual and valuative signs. Part I follows, consisting of twelve essays contributed by Willis Moore, Edward Schouten Robinson, Charles Morris, Stephen C. Pepper, E. Maynard Adams, Ian McGreal, A. Campbell Garnett, Herbert Fingarette, Richard B. Brandt, Harold N. Lee, Robert S. Hartman, and Ray Lepley. Part II consists of comments on each paper by another member of the group (plus Laurence J. Lafleur, Herbert Feigl, and Charles L. Stevenson), followed by a response from the original author. At the end there is a general review by Hartman and a summation by Lepley.

The two last mentioned papers, though perhaps unintelligible to one who has not read the essays they summarize, furnish a critique of the whole enterprise. They emphasize the point that, although each author made a worthy contribution, the linguistics, semantics, and semiotic of value theory can stand a great deal of development. Whether such development is valuable no one discussed.

Throughout there is a conscientious endeavor to keep the discussion to the topic at hand: the *language* of value. Time and again authors insist that they are not treating of ethics but of the signs or language used to convey value-judgments, be these values esthetic, moral, eco-

nomic, political, or in any other field where values apply. But occasionally the writers seem impatient with the thinness of their material and almost venture a commitment to a stand on a basic philosophical issue. Paradoxically, in his summation the editor chides the essayists with "failure to view their problems in a sufficiently inclusive experimental perspective."

The discussions center around the problem of whether axiology can be a science. There are two main areas of discourse, terms and judgments relating to facts and scientifically verifiable, and those relating to values, which so far seem not to be scientifically verifiable. There is a feeling that values are not wholly subjective and that a merely emotive interpretation is insufficient, yet a dissatisfaction with any hitherto suggested mode of giving values objectivity or even of determining the meaning, if any, of value-statements.

What might be called the topic sentence of each essay will give a general idea of the book's contents. We have the theory that a value situation must exist before it can be expressed in language, and that value experiences appear at various nodes along a continuum from subject to object. We have a classification of value-theoretical terms, together with their stimulus-effects, significations and uses. The terms "good" and "bad" are examined in every context and classified as appraisive rather than as designative signs. We have intrinsic and extrinsic values, empirical and terminal satisfactions, subordinate and superordinate goals. We have adjustments to environment giving rise to science and descriptive-explanatory conceptual systems, and adjustments to interests giving rise to axiology and descriptive-justificatory conceptual systems. There is the recognition that a thing is not good because it is called good, but only if it can win favor upon examination by a hypothetical third man. There is an endeavor to define "good" in non-normative terms, thus perhaps acting as a bridge between fact, which is not normative, and the "ought," which is. Statements of value are brought forth to show that value-judgments can be non-attitudinal, and that cognitive and affective elements can both be involved in value statements. There is an effort to discover the locus of intrinsic value, centering it not in a judgment but in a contextual property of the value experience, a transaction of conative-effective sensitivity. There is an elaborate classification of logical and axiological propositions, on which it is hoped that a calculus of values, truth-values, choices and agreements may be built.

The scholastic philosopher should not be too unsympathetic towards these efforts. In many respects he is already in possession of what they are feebly groping for, but in sign theory, linguistic analysis, and the classification of meanings they have passed him by. This may be a limited field of learning, but there should be experts in it, as in any other field.

A striking lesson from the book is the futility of dealing with such problems apart from metaphysics. Though the problems are linguistic, the linguistics are about value, and value, inseparable as it is from the good, cannot even be discussed except on a background of metaphysics. Whether the writers are positivists or not, the exclusion of metaphysics from the discussion makes the whole endeavor positivistic. Thus by not taking a stand they have one.

The essays differ in quality and style, as should be expected, but the effort to emulate mathematical expression in a reaching for preciseness eliminates anything like grace or elegance. Metalanguage feeds on itself and chokes on its own exuberance. Philosophers have long ago ceased speaking to the public. They can now be understood only by themselves, in smaller and smaller groups. We seem to be approaching the limit when each philosopher will be able to speak only to himself. Must linguistics have such a suicidal tendency?

The present book will be of interest to those who wish to keep up with modern thinking in the field of linguistics or semantics of axiology. The language of value is used here profusely. The value of the language is another matter.

AUSTIN FAGOTHEY, S. J.

University of Santa Clara,
Santa Clara, California.

Exposition of the Posterior Analytics of Aristotle. **By St. Thomas Aquinas, transl. Pierre Conway, O. P., revised by William H. Kane, O. P. Quebec: M. Doyon, 1956. Pp. xv + 449, with index. Mimeographed, $6.00.**

St. Thomas considered the *Posterior Analytics* of Aristotle a scientific methodology of fundametal importance. He appeals to it as an authority forty-two times throughout the two *Summas*, as he applies its principles to the development of scientific theology. Toward the end of his life he wrote a lengthy commentary on it, wherein he brings out

the riches and significance of the book. It is to our advantage that he has done so, for the *Analytics* of Aristotle is difficult reading by reason of the concise manner of expression used by its author, not to speak of the intrinsic difficulty of the matter treated. The present *Exposition of the Posterior Analytics of Aristotle* is a translation into English of St. Thomas' commentary.

In this commentary we find the doctrine which St. Thomas accepted from Aristotle on the nature of science and the conditions for acquiring it. Scientific knowledge, or certain and necessary knowledge through causes, is the final cause of the whole of logic, as we see in the prologue. Thus, logic is a general methodology of science, a conception that is lost in many modern manuals, which are so concerned with formal logic that they neglect or entirely omit what St. Thomas calls material logic, the principal part of which occurs in the *Posterior Analytics*.

It is significant that for Aristotle and St. Thomas scientific knowledge has a strict and precise meaning: it is a knowledge gained by *propter quid* demonstration. The conditions and requirements of this type of demonstration dictate the division of sciences and the internal development of each science. All the other noetic processes and all the lesser types of demonstration are ordained ultimately to the service of *propter quid* science. These principles, fully developed and exemplified by St. Thomas in this commentary, are absolutely necessary for us if we are to reconstruct Thomism as it existed in the mind of its founder. They are also necessary in discussing the modern problem of the relation between philosophy and experimental science; for the experimental method fits to a great extent into the fact-finding stage of sciences, and these facts look for further elaboration and explanation in *propter quid* demonstration through proper principles and causes.

St. Thomas' commentary is valuable, not only for its very complete treatment of general principles, but also for many *obiter dicta* on the nature and method of natural philosophy and metaphysics. A deep study of this important source is indispensable for anyone who would do constructive work in the developing of Thomistic philosophy.

The translation has been done with an eye to rigorous accuracy. A number of Latin expressions, such as *propter quid, dici per se, per accidens,* etc., have been retained, rightly so, in the opinion of this reviewer. The table of contents shows clearly the topic of each lecture. There is a valuable outline of the whole work (pp. ix-xvi) and outlines

are placed at the beginning of each lecture. In the margins are the cross-references of the Leonine edition, and to supplement them a fourteen page topical index is added.

It is regretable that no commercial publisher could see value in this book of fundamental philosophical importance. Nevertheless, those who are acquainted with the valuable service of Michel Doyon in making available in mimeographed form philosophical texts otherwise inaccessible will be assured that the present format of the *Exposition of the Posterior Analytics of Aristotle* is not entirely unworthy. The mimeographing is of high quality, and the double-column page gives the work a dignified appearance. It would have helped for reference purposes if the number of the lecture had been placed at the top of each page.

The publication of this work is a definite contribution to the understanding and progress of Thomistic philosophy.

MELVIN A. GLUTZ, C. P.

Saint Gabriel Monastery,
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St. Thomas and the Future of Metaphysics. **By Joseph Owens, C. Ss. R. The Aquinas Lecture, 1957. Milwaukee: Marquette University Press, 1957. Pp. 97. $2.00.**

Fr. Owens, long well-known to Thomistic scholars for his careful scholarly work on the foundations of Thomistic metaphysics, has here presented to a wider public another deeply thoughtful and characteristically challenging essay. He has taken as his theme the role which an alert and vital Thomistic metaphysics can and should play in the intellectual life of contemporary Western civilization.

After an extended introduction on the disconcerting variety and disunity of metaphysical doctrines down the ages, especially since St. Thomas, he undertakes to show how the metaphysics of St. Thomas possesses the special aptitude to fulfill the role demanded of a metaphysics today. The task of metaphysics is to fill the need "for a general science that will in some satisfactory way assess the relative place of each of the particular sciences and allow the work of all to be seen in some kind of unity and harmony. This will have to be a science that regards all things from the widest possible viewpoint. . . . Such a general science alone can satisfy, as far as is possible in this life, the

unifying tendency of the human intellect, which is not content until it sees a universal principle of order in some way pervading all the objects that are presented to it" (p. 28). Approached from the Christian point of view, metaphysics also has the special function of supplying a solid foundation for the scientific knowledge of God and the soul.

The special aptness of St. Thomas' metaphysics for meeting these needs lies in this, that it alone of all the great metaphysical systems of history has taken as its central focus and principle of intelligibility the one truly universal principle of all thought as well as being—being as grounded in the act of existence. In grasping the whole order of beings, i. e., of existent essences, under the unifying aspect of the act of existence, which makes them both to be and to be intelligible, such a metaphysics is able to situate not only all beings but all forms of knowledge of being in a truly ultimate hierarchy of order and value. It also has the advantage of enabling one to construct a proof of the existence of God which moves from creature to Creator within the same analogous order of being and thus is not faced with the special difficulty experienced by many other systems of justifying the sudden leap from finite to infinite, conceived as the passage from one essence to another.

The same all-embracing viewpoint enables Thomistic metaphysics, if it has awakened to a true understanding of itself, to remain ever open to assimilate newly developed or newly discovered finite modes of being rather than harden into a closed system built around one or other particular mode of being. It should also equip it, though it has not as yet lived up to its responsibilities along this line, to understand sympathetically and assess constructively the contributions of other metaphysical systems or doctrines which operate from a narrow basis of intelligibility than itself.

All this—the general positive message of Fr. Owens' lecture—is excellent and well said. A considerably more controversial note, however, is sounded in the section where he spells out in more detail what he warns is the most difficult part of the task ahead, namely the determination of the exact nature and method of a metaphysics that can claim to be authentically Thomistic, since St. Thomas himself did not do this for us in any complete and systematic way in his works. The author centers his discussion around the proper understanding of the doctrine of the real distinction between essence and existence and

the proper method of linking this doctrine with the existence of God.

Here the author sketches briefly some of the main themes he has already developed in longer scholarly articles. Professional metaphysicians will recognize the controversial issues lying under the surface or alluded to in passing and those who do not agree with Fr. Owens on all the points touched on will not find in this lecture adequate answers to the questions they would like to ask him. Thus the long footnote n. 23 on the nature and role of essence in relation to the act of existence seems to me to overstress at least in language, the "extrinsic" character of the latter and as a result to accord too much intrinsic positive content to essence as other than *esse*. A comparison with the paper of Fr. Gerald Phelan in the 1957 PROCEEDINGS OF THE AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION, in conjunction with the commentary of this reviewer, will bring out the difference in viewpoint even among "existential Thomists." It should be noted also that the text adduced from Chapter I of the *De Ente* of St. Thomas to bear out the author's interpretation of essence is actually not speaking of essence but of *ens*, the composite of essence and existence. We would also like to see considerably more explanation and discussion before agreeing with the author that "reliance on a self-evident principle of causality as the ultimate basis for factual reasoning"—and hence presumably for the proof of the existence of God—"must be purged from metaphysical thinking that would call itself Thomistic" (pp. 52-53). Again, the author's insistence on the rigorously demonstrative character of metaphysics in accordance with the ideal of science of the *Posterior Analytics* does not seem to be borne out by the predominantly reflective-intuitive method actually followed in the concrete by St. Thomas himself and most existential Thomists.

In a word, the alert reader will find this little book both illuminating and challenging—which is no doubt exactly what its author intended.

W. NORRIS CLARKE, S. J.

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Secrétaires de saint Thomas. **By Antoine Dondaine, O.P. Rome: Santa Sabina, 1956. Two volumes, pp. 279; 15 and 40 plates.**

Autographs exist of only some of St. Thomas' earlier works: the *reportatio* of Albert the Great's commentaries on the Pseudo-Dionysian corpus, a large part of the *scriptum* on Book III of Peter Lombard's *Sentences,* a fragment of the exposition of Boethius' *De Trinitate,* about half of the *Summa Contra Gentiles,* and ten leaves of the commentary on Isaias. The most plausible reason for the lack of autographs of the later works is the difficulty which even his contemporaries experienced in reading St. Thomas' *littera inintelligibilis.* Besides, as the contemporaries also testified, the saint dictated his works.

Fr. Dondaine is president of the Leonine Commission for the editing of the works of St. Thomas. The Roman section is doing the *De Veritate.* The most precious tool they have is manuscript Vatican Latin 781, which is the original text of Questions II to XXII, article 11, of the *De Veritate* and the archetype of its other extant manuscripts. It is to present the value of this unique instrument that the present book has been written. (Another dictated manuscript, Naples, Bibl. Naz. VII F 16, containing the commentary on the *Metaphysics,* is disregarded because it is later than the manuscripts examined here and is written in different hands.)

Part I treats of the scriptorium of St. Thomas, and begins with the testimony of contemporaries referred to above (Chapter I). Then follows a detailed analysis, even line by line, of certain manuscripts which were written by associates of the saint. Manuscript Vat. lat. 718, which contains commentaries by St. Albert on works of Aristotle, was written by four persons, three of whom (designated A, B, and C) simultaneously transcribed folios 142va-225 for Albert or for someone close to him (Chap. II). Hand C reappears in Vat. lat. 9851, which in large part is the autograph of Thomas' commentary on Book III of the Lombard's *Sentences;* this hand links Mss. 9851 and 718; hand E, which inscribed St. Thomas' dictation of part of this commentary, links the two Mss. with St. Thomas (Chapter III). Hands A, B, and D appear again in Vat. lat. 781, which contains three groups of Questions by St. Albert and the *De Veritate;* hand F, with which Dondaine would identify hands g, o, p, q, r, and perhaps s, also occurs here and in the autograph (Vat. lat. 9850) of the *Summa Contra Gentiles* (Chap. IV). One fascicle (*cahier*) of Vat. lat. 781, in the midst of the Questions of

St. Albert, was in the hands of St. Thomas at the time of its copying, as is indicated by a note on one folio of a portion detached from it for St. Albert; the presence of the same hands (A and m) in it and the other fascicles indicates a unity of origin of the entire manuscript; the chronological order of the works it contains confirms the existence and throws light on the nature of St. Thomas' work rooms (Chapter V).

Part II takes up the *De Veritate* in detail. Text A (Questions II-XXII.11, written by hand A) is the original of the *De Veritate* in its traditional form, presenting the text as it evolved and in its ultimate state, for the other Mss. have no trace of further development of the text but only omissions and mistakes and unimportant retouches (Chap. I). But this original is not an autograph of St. Thomas nor is it the work of a copyist, as is proved by the nature of the corrections and changes of words, phrases, and passages, which are of such a kind that they can be due only to the author (Chap. II). Text A is also the archetype of the manuscript tradition; the 73 manuscripts of the University of Paris tradition are divided into four families each of which represent several types of exemplars that go back to transcriptions made in St. Thomas' scriptorium; five independent witnesses, the most faithful of which is the series of excerpts found in Vincent of Beauvais' *Speculum naturale,* are closer to the archetype; comparison of the text of the 78 witnesses with text A leads Dondaine to a warning concerning the value of "critical editions": in 63 of the 127 variants in Qu. XXII, articles 10 and 11, in which the 78 witnesses agree against A, an editor would have gone against the authentic text (Chap. III). Chapter IV dates the composition of the three Mss., Vat. lat. 718, 781, and 9051, necessitating the dating of some of St. Albert's works a decade earlier than is commonly held, and proposes the identification of some of St. Thomas' secretaries.

The book concludes with five appendices and five indices. Appendix I disproves Mandonnet's equating of the article with the "Dispute" and makes clear the need for haste in transcribing the *De Veritate* which caused many of the errors in the four families of the tradition. Destrez's evaluation of the families on the basis of the long and short redaction is rejected in Appendix II. St. Thomas' use of *nam* only in later works is briefly presented as an instance of the value of linguistics in the dating of his (and other persons') works (App. III). Appendix IV treats the authorship of a Question on the beatific vision which occurs, out of place, in Vat. lat. 781. Appendix V is a welcome tran-

scription of the 40 plates which present specimens of the handwriting of St. Thomas and the various secretaries.

Father Dondaine several times speaks of the aridity of his book and of the subject matter. Actually it is an exciting book, and a model of textual criticism. It is written with the enthusiasm, the thoroughness, and the careful workmanship that readers of Dondaine's editions and studies of the heresies of the twelfth and thirteenth centuries have come to expect of him.

JOSEPH N. GARVIN, C. S. C.

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Remarks on the Foundations of Mathematics. **By Ludwig Wittgenstein. Edited by G. H. von Wright, A. Rhees and G. E. M. Anscombe. Translated by G. E. M. Anscombe. New York: The Macmillan Company, 1956. Pp. xix + 196, with index. $5.75.**

This volume of Wittgenstein's posthumously published works is compiled from manuscripts on the philosophy of mathematics and logic written between 1937 and 1944. This edition contains *both* the original German and the English translation, and the editors have supplied a detailed table of contents. The editors have also divided the treatise into five more or less chronological parts but they have not ventured to arrange the matter so as to avoid repetitions. Consequently, one must read the various sections keeping in mind that they are selections from more extensive manuscripts.

Part I is generally concerned with the problem of logical inference, proof, and an appendix dealing with denumerable and non-denumerable sets. In this part the author uses some rather trivial examples to represent the method of a mathematical proof. Indirectly, however, he demonstrates the concept of *correspondence* (he calls it *correlation*) which is fundamental in the modern concept of function. After the manner of Gödel, the author also asks some questions about the possibility of there being true propositions in Russell's system which cannot be proved in Russell's system. Definite conclusions to such questions and conjectures here and throughout the book could not be reached in the brief treatment given to them—but such points are

thought-provoking. The discussion on the denumerability of the rationals and the non-denumerability of the real numbers is concerned with the usual diagonal method of proof. This section assumes that the reader is familiar with this method and with such technical terms as "algebraic number."

Part II takes up the relationship between logic and mathematics, with considerable emphasis being given to the logic and calculus of Russell, and the role of experiment and contradiction in mathematics. Readers who are familar with Russell and mathematical logic will find an interesting portion of Part II devoted to the conjecture that there exist proofs in the decimal system which correspond to proofs in Russell's system. Scattered throughout this part the reader will also find a number of clichés. The tendency of the author to make remarks which are rather trite is, no doubt, one reason why some of his writings arouse considerable controversy.

Part III considers the nature of axioms, the use of pictures as proofs, and intuition in mathematical thought. Apparently, the author is not extremely interested in these problems but he does make it clear that, even in geometry, the picture is only an aid to the proof.

Part IV views mathematics as a game (acting in accordance with certain rules) and as a machine-like activity, as well as taking up certain considerations on the law of excluded middle, existence proofs, and a comparison of the extensional and intensional in mathematics. For the latter discussion the author uses the Dedekind cut as a model in the extensional definition of the real numbers. In some ways this is a good example, for it brings up the important point that the concept of a cut in the rationals is interesting even if we consider only the problem of placing an arbitrary rational in a class.

To mention the troublesome matter of clichés again, we find the following typical statement by the author: "'Mathematical logic' has completely deformed the thinking of mathematicians and of philosophers by setting up a superficial interpretation of the forms of our everyday language as an analysis of the structures of facts. Of course in this it has only continued to build on the Aristotelian logic" (IV, p. 48).

Part V is taken from Wittgenstein's writings in the period 1941-44. The first half deals with the relation between mathematical and empirical propositions, between calculation and experiment, contradiction and consistency, and touches Gödel's problem. The second half treats of following a rule (a favorite topic of the author) and a

further discussion of proof and inference. Partly because the editors have left out some remarks which occur verbatim in the author's *Philosophical Investigations,* some statements appear to be out of context. It would seem that the author's special interest in the nature of the rules of calculating must have plagued him in his younger days, for, especially in Part V, he devotes a wearisome amount of time to this aspect of the structure of arithmetic. The reader who is familiar with the modern structure of rings in algebra will happily retreat to a more axiomatic point of view.

Near the end of the volume there is an almost self-contained section on what we might call "basic notions on mathematical thinking." In this portion there are some fine geometric examples for illustrating mathematical concepts and proofs.

In general, this treatise brings up a large number of questions concerning the nature of mathematics known up to the time of Russell. Because of the phenomenal development of point-set topology and algebraic topology during the past quarter century some of the remarks may seem to have a rather trivial reference to what constitutes the foundations of mathematics. There is but slight reference to the axiom of choice and, of course, none to Zorn's Lemma. There is little doubt that Wittgenstein's mature treatment of such widely accepted principles would have been most refreshing if he had lived to see their widespread use in the development of mathematics. At any rate, this volume should be of great interest for all mathematicians interested in the philosophy of mathematics—and for all philosophers who have a fair amount of mathematical background.

VINCENT O. MCBRIEN

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The Biological Basis of Human Freedom. **By Theodosius Dobzhansky. New York: Columbia University Press, 1956. vi + 139. $2.95.**

If this book is read with the hope of being enlightened by new and stimulating ideas from the pen of "one of the world's greatest living biologists," as the author is hailed on the book jacket, the result will be disappointing. As always, Dobzhansky presents an interesting array of biological facts and theories. His attempts to change attitudes

concerning inherited characteristics may be enlightening for those not versed in genetics literature. But the core of this book is shot through with disturbing inconsistencies. It is reminiscent of Whitehead's observation that in modern science oftentimes a blind faith makes the scientist impervious to the demands of consistent rationality. At least for those who are looking for a truly scientific approach to the subject of what biology has to say on human freedom, this book will have little appeal.

Haldane, Huxley, Simpson, to mention a few other outstanding contemporary biologists, have all felt it necessary from their knowledge of biology to give an explanation of man's social, cultural and ethical life. Dobzhansky in this series of lectures given in 1954 at the University of Virginia makes his contribution to this theme. The unifying concept in the book is the fact of evolution, which according to Dobzhansky is doubted only by the biased or ignorant. Genetics or the genotype (genetic makeup of the organism) and the phenotype (the expression of the genotype in this individual) supposedly are giving us a total explanation of the world above the mineral. Once again we find a modern biologist concerned with only two causes, the material and the efficient. There is evidence of a faint glimmer of formal causality, e. g., although ultimately mutations are due to environmental factors, "the properties of a mutant are dependent on the nature of the gene that made the change" (p. 19). But for the most part the concept of the genotype which has emerged from the soil of nineteenth century mechanism in science is called in to bear witness on every problem. One wonders why Dobzhansky does not push back the frontiers of genetics and, in step with physics and chemistry, concern himself with more ultimate particles than his molecular genes. In this book one seemingly is breathing the stale air of a mechanistic explanation in biology which, by the standards of modern physics and chemistry, is about 50 years behind the times. Dobzhansky is probably not unaware of Whitehead's theory of organism which supposedly opposes mechanism in science, but which also has a familiar materialistic ring as both genes and molecules are raised to the status of organism, and definitions are sought in terms of vibrations. Schrodinger's explanation of gene mutations in terms of quantum jumps (which he assures us is sound science, since in quantum mechanics we have first principles accounting for all molecular aggregates) is less reassuring after one of the cornerstones of nuclear physics, the law of parity, lost

its foothold a few months ago. At least men like Whitehead and Schrodinger are willing to pursue the path they have singled out even though the forest around them gets dense and very confused with only suggestions of openings into metaphysical light. Dobzhansky balks at such an exploration; he fails to grapple with the inconsistencies which he rather blissfully ignores.

After assuring us that a human genotype is necessary to produce a man, that no account of training or conditioning can make a man from an ape genotype (p. 25), he later refers to a "man ape" (p. 103). His "incontrovertible" fact that "man is a biological species which has evolved from ancestors who were not men" (p. 9) leaves us with a healthy inclination to bring in another ape and watch the evolution take place. Chesterton once pointed out that for a man who does not believe in a miracle a slow miracle is just as incredible as one that takes place at a faster pace. Man's cultural evolution is said to be "superorganic" (p 20), "a new nonbiological heredity" (p. 72). Yet man himself came to be as a result of "a particular pattern of evolutionary forces rather than the addition of any unfamiliar or inscrutable agent" (p. 10). Not only does Dobzhansky deny the need for a Prime Mover, he sees no reason for bringing in "a supernatural or an esoteric force" to explain the appearance of man and his superorganic culture on the evolutionary scene (p. 121). He claims that the theory of evolution is "a reaffirmation of man's dignity and liberation from spiritual bondage" (p. 4).

In lectures on "Man's Kinship with Nature," "Heredity as a Basis of Culture," "Who is the Fittest," "Human and Animal Societies," the author prepared the way for his final chapter on "Necessity and Freedom." We were given a hint of the basis of man's freedom when Dobzhansky pointed out that man is not determined by his genotype, but that by modification of the environment he may produce a more suitable phenotype, or in other words, hereditary traits may be modified (p. 23). Man is therefore *free* to produce optimal phenotypes. Is this the freedom which has its roots in biological soil? If so, a Thomist would agree that there is a biological basis for such freedom. Man does exercise some control over nature; matter is in potency for different forms; the subject often needs to be better disposed in regard to the form.

What attention does Dobzhansky give to the soul or its powers in explaining human freedom? Intelligence is referred to as "the de-

velopment of the cerebral functions" (p. 128). "Mysterious psychic energies" (p. 14) have given way to the almighty gene. The gene does, however, yield to the environment; therefore, grounds for nature worship are perhaps being reclaimed. Toynbee in his view of universal history sees nature worship as the forerunner of the worship of man or of an absolute. Huxley and his like seem to have reached the worship-of-man stage in their religion of eugenics, with man as the world dictator. Ethics also for Simpson and Huxley has evolved, but once again Dobzhansky refuses to face the conclusions which would follow from his principles. Seemingly the terrible void left in the human soul by the crumbling of a divine sanction as the foundation of ethics is reason enough for rejecting Huxley's evolutionary sanction for ethics. One wonders from whence comes this divine sanction? Dobzhansky attempts to explain all phenomena of living things without recourse to any "extraneous power," without "a supernatural or an esoteric force," without "mysterious psychic energies." Could he be guilty of a blind faith such as Simpson thinks accountable for the present chaotic condition of humanity?

What is this being which is man? Although Dobzhansky correctly sees man's judgment of right and wrong as "ineradicable from the human mind," yet whence comes this mind? How explain biological evolution transcending itself to produce man (p. 27)? How explain this new purposeful cultural evolution, this nonbiological heredity? What is this new human evolution in which ethics find a foothold? From whence do we have ethics which is not genetically determined and is not the product of biological evolution? Perhaps Dobzhansky can answer thse questions, but he has failed to do so in this book.

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Introduction to Logic. **By Andrew H. Bachhuber, S. J. New York: Appleton-Century-Crofts, Inc., 1957. Pp. xiv + 332, with index. $3.50.**

This final edition of Fr. Bachhuber's textbook in logic represents approximately ten years of preparation and re-thinking of the subject matter. The first test edition appeared in 1949, and the second revised test edition was made available in 1952. Since these two preliminary

editions have been used at several colleges and universities, Fr. Bachhuber's approach to logic is fairly well known to many teachers and students. Although the order followed in this final edition is essentially the same as that of the second test edition, the examples and explanations of theory have been considerably expanded and improved.

In the preface the author raises the question of the justification of publishing another text in a field that has seen so many volumes in recent years. This justification is not attributed primarily to the content. The topics discussed in this book are essentially the traditional subject matters of scholastic logic. But Fr. Bachhuber emphasizes that he has followed an inductive approach to this subject matter which is more effective than the usual presentation. The various problems of logical reasoning are initially presented in concrete, well-chosen examples, and from an analysis of these examples the text works inductively to an understanding of the general principles of thought. This approach has the decided advantage of clothing the laws of reasoning with concrete realities so that the student does not come to understand logic as a set of a priori, deductively derived principles. Closely interwoven with the examples in the inductive movement are a large number of well-constructed diagrams which deal with the extensional interrelations of the elements of reasoning. The author is aware that this latter technique runs the risk of implying for some a purely quantitative theory of predication (p. 76, note 1). However he feels that these visual aids for recognizing validity or invalidity in reasoning are most helpful—as long as it is clearly pointed out to the student that this does not constitute an adequate theory of predication.

Another consequence of Fr. Bachhuber's inductive approach is a postponement to the later chapters of the more difficult theoretical matter dealing with the concept, the predicables, the categories, etc. The first three parts of the text (dealing with the general notion of inference, immediate inference, and mediate inference respectively) are primarily functional in nature (approximately two-thirds of the text). These chapters designedly present the minimum understanding of the term and the proposition which is required for the treatment of inference. The reader is introduced very early to the problem of examining the validity of the various types of reasoning. Fr. Bachhuber rightly feels that this has the advantage of better preparing the student's background for the presentation of the more theoretical matter in the later chapters. However the material is outlined in such a way that the functional and theoretical chapters could be taken

concomitantly, or else, if time so demands, the functional chapters alone could be presented.

Since logic is frequently taught as a preliminary to further courses in systematic philosophy, Fr. Bachhuber's treatment of induction (Chapter 15) should receive special attention. He carefully distinguishes between intellective and rational induction, pointing out that the former establishes a universal and necessary truth by means of an insight into the intelligibility of the particular. Since the principles worked out earlier in this text were approached in this fashion, the student can better appreciate the nature of intellective induction, and perhaps he will be able to recognize this method of argumentation in his later studies in systematic philosophy.

A special pedogogical value of Fr. Bachhuber's text is the inclusion of numerous traditional and new examples in the exercises which follow each section of new subject matter. These exercises are designed to provide not only further material for the inductive approach to the principles of reasoning, but also to give opportunity for the student to develop the habit of applying the principles in concrete cases.

The above features, plus the understandable language in the body of the text and the clear divisions of the subject matter, make Fr. Bachhuber's book a very profitable and workable source for students who are being introduced to logic.

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Averrois Cordubensis Commentarium Medium in Aristotelis de Generatione et Corruptione Libros. **Edited by Francis H. Fobes and Samuel Kurland. (Corpus Commentariorum Averrois in Aristotelem,—Versionum Latinarum, Volumen IV, 1.) Cambridge, Mass.: The Mediaeval Academy of America, 1956. Pp. xliv + 216. $5.00.**

With this volume the Mediaeval Academy makes available another work of Averroes in Latin, the language through which it was known to medieval Christian thinkers. As the editors point out, the Latin translation of this work, perhaps by Michael Scot, was certainly known by 1243 and may have existed before 1233.

Students of the Commentator are aware that for some of Aristotle's works, Averroes wrote three types of commentaries: the great com-

mentary, which cites Aristotle's text section by section and explains each passage in turn; the middle commentary, which cites Aristotle's text only partially before giving the interpretation; and the paraphrase which summarizes the author's teaching in whatever order seems suitable and interprets the text more freely than the other two types. For the *De Generatione et Corruptione* we possess two kinds of commentaries: a paraphrase (*Compendium*) and a middle commentary. It is the middle commentary, in a critical edition of the Latin translation, which the editors present here.

The reader who is familiar with the form of a "great commentary" (e. g., that on the *De Anima* published by the Mediaeval Academy in 1953) may find a middle commentary like this one, quite puzzling. Here, except for an occasional "Dixit," there is no clear differentiation between the citation of Aristotle and the interpretation of Averroes. So closely does the Commentator follow his master that for the most part he seems merely to be voicing the Philosopher's thoughts. One looking at the *De Generatione et Corruptione* and at its commentary will see that the commentary parallels point-by-point the topics Aristotle treats of: the critique of the views of Aristotle's predecessors on coming-to-be and passing-away; the precise nature of generation and corruption as distinguished from alteration and growth; and the causes of generation and corruption. Even the minor points are faithfully reported.

This fidelity may be explained by Munk's remark (in *Mélanges de Philosophie Juive et Arabe*) that what we call a "middle commentary" Averroes called a "summary," but the reader may still wonder what the commentary contributes to the text of the "Magister." Its contributions are principally as follows: it here and there includes a sharper statement of a point than Aristotle does; it reveals its author's knowledge of the Master's works (especially the *De Coelo et Mundo* and the *Physics*) by referring to their discussions of similar points; it seeks to clarify some texts by comparing or contrasting them with the views of other Greeks or Arabs. In one passage Averroes points to the difference in the use of certain terms in Greek and in Arabic; in another passage he gratuitously introduces Mohammed's view on the length of human life in a way that shows its harmony with one of Aristotle's statements (an interesting maneuver considering his own problems with the theologians of Islam). Avicenna's account of Aristotle's view of "the mixables" being in potency in the mixture is

briefly reported. Elsewhere Averroes carefully compares and contrasts the views of Aristotle and Plato on form as an active cause. The only long digression occurs in the chapter on the explanation of growth. Here Averroes sets forth the position of Alexander of Aphrodisias and shows that the discourse of the Master should not be understood according to what Alexander thought. This passage in Averroes, incidentally, is referred to by St. Thomas Aquinas in his own commentary on Book I of the *De Generatione et Corruptione*. Basically, however, Averroes' commentary is not so much a springboard for a discussion of other men's views as a presentation with an implied acceptance of Aristotle's teaching on generation and corruption.

Of particular interest for an understanding of Averroes and the Master's impact on his thought are the texts (especially those near the end of Book III) concerning the causes of the continuity of generation. Where motion is eternal, there always will be generation, but how can there be "perpetuity" in generated things? Though lacking the fullness of the exposition in the *Physics*, the *De Generatione et Corruptione* and its commentary point to circular motion as the perfect and primary motion that guarantees the continuity of motion in the universe. Found in a nearly perfect way in the rotation of the heavens, it occurs in a less perfect way in the realm of generation and corruption. Aristotle and his Commentator point out that things can "return upon themselves" (and so insure their continuity) in two ways: *numerically* (e.g., the everlasting return of heavenly bodies to the place they have left); or *specifically*. They hold that while it is true that the individual man or animal does not "come-to-be" a second time (i.e., there is no numerical recurrence of the same individual), nevertheless the unending succession of individuals coming-to-be and passing-away insures the continuity of the species. As Aristotle says, "God . . . fulfilled the perfection of the universe by making coming-to-be uninterrupted." Averroes accepts this doctrine from his Master together with that of the eternity of motion. In the *Commentary on the De Anima* he relies on the unending succession of individuals coming-to-be and passing-away to provide the eternal separated intellect with the never-failing supply of the phantasms it needs as the preliminary data for its philosophical knowledge. Because of the doctrine expressed in the *De Generatione et Corruptione* Averroes is confident that though individual men may come and individual men may go, philosophy will last forever.

This edition of the *Commentary on the De Generatione et Corruptione* concludes with a Latin-Arabic-Hebrew-Greek glossary, a Greek-Latin index to that glossary, and a conspectus of chapters, folios and pages in the 1550 Junta edition of Averroes, the 1831 Berlin edition of Aristotle and the Semitic manuscripts.

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The Artist as Creator: An Essay of Human Freedom. **By Milton C. Nahm. Baltimore: The Johns Hopkins Press, 1956. Pp. 352, with index. $5.50.**

The task of choosing a good teacher is a difficult one. Very few men are sufficiently gifted to be so keen in their observation of created nature that they can easily distinguish a proposed teacher who offers a reasonable explanation of this nature from a teacher who cannot offer this explanation; and this is true whether the teacher is actually living or has merely left his doctrine in writing or in living disciples. Nahm has met this difficulty in his search for an explanation of artistic freedom. Had he met someone who could have led him to the complete works of Aristotle and guided him as to an order to follow in reading these works, he could have found the answer to the problem about artistic freedom.

Nahm does depend upon proposed teachers. Now many authors take all the writings of proposed teachers to be rhetorical; and since rhetoric involves the circumstance of time, they conclude that all writings are dated and classify them as "outdated," "up to date," or "prophetic" (in the sense that the writings of a certain author could not be understood at the time of their composition because the author was "ahead of his times"). Nahm does not fall into this trap but, if anything, its opposite. He takes all writings to be scientific. He could have been released from this illusion had he considered, for example, that Aristotle's psychological tracts are the basis for the Stagirite's doctrine on the *Poetics*. Then he would have discerned the rhetorical character of the writings of such authors as Croce and Bosanquet; he would have seen, for example, that intelligence and imagination are not mutually exclusive (contrary), but mutually cooperative principles of so-called fine art.

Nahm could have avoided his pitfall in another way. If he had a more thorough-going knowledge of the history of art, he would have noted that authors like Croce and Bosanquet are "dated" because of their sympathy with those artists of their time who falsely judged that the escape from the excesses of romanticism could be only through a proposed complete independence from external reality. Indeed, had he investigated the history of nineteenth-century romanticism, he would have discovered that many of the excesses thereof were occasioned by the fact that artists were placed in the position of seeking a livelihood, first under the patronage of a decadent nobility, then according to the whims of the rising bourgeoisie. Many nineteenth-century artists judged that they had to seem unusual (that is, "geniuses") if they were to gain support, since the "genius" eccentricities appealed to many persons in the two social classes mentioned previously (cf. for example, the articles on Beethoven, Brahms, Mozart, Paganini, Rossini, and Schumann in *The International Cyclopedia of Music and Musicians*, edited by Oscar Thompson [New York: Dodd, Mead and Co., 1949]).

The relation between the artist and the society in which he lives is a principle whence one starts to investigate artistic freedom, since, as St. Thomas notes (*In I Ethic.*, lect. 2), the *use* of all arts is ordered to the common good of civil society, and consequently there is a proportion between artistic freedom and the artistic function performed. Now the artists of whom Nahm speaks (that is, *poetic artists*) have a well-defined position in the civic hierarchy. Their position is higher than that of manual laborers and farmers, but lower than that of the rhetoricians, the dialecticians, and the scientists. The precise civic function of the poetic artist as such is to whet the minds of other citizens to an interest in matters which they have not previously considered or which they have not sufficiently examined. Of course, these matters are not necessarily political issues; they may pertain to any of the sciences, although the various poetic arts are more capable of representing moral matters (ethical, domestic, and political) than of any other matters. To fulfill its purpose, poetic art must be significant; otherwise, it cannot communicate, it cannot arouse interest.

By comparison with the Aristotelian-Thomistic consideration of the poetic arts, Nahm's study is a rambling dialectic, as is evident from the Table of Contents. The work is divided into two books. The First Book concerns "The 'Great Analogy'"; the Second Book is entitled "The Structure of Art and Fine Art." The consideration of "The

'Great Analogy'" is divided into six chapters entitled respectively "Creativity and Freedom," "The 'Great Analogy,'" "The Ugly," "The Genius," "The Genius and the Prophet," "Genius, Its Philosophical Significance: The Sublime and the Beautiful." The second Book is divided according to the following chapter headings: "The Structure of the Work of Art," "Structure and the Judgment of Art: Concrete Significant Form and the Freedom of Making," "The Aesthetic Relation of the Arts: The Structure of Value and Judgment," "The Aesthetic Relation of the Arts: Aesthetic Structure and the Judgment of Fine Art," "The Structure of Fine Art: The Specification of Aesthetic Values and Movements of the Imagination," and "Conclusion: The Freedom of the Fine Artist."

The "great analogy" of which Nahm speaks is the comparison of the human artist with God. He records a suspicion that this analogy can be falsely understood when he says: "It is significant . . . that once the theological terminology has fallen into disuse, the use of the word 'analogous' has suffered to endow the artist with freedom commensurate with that attributed to the Deity, at least as regards omnipotence and omniscience. This has sufficed for consideration of the fine artist as one with power to produce by his art or imagination unique individuals and to transcend natural laws" (p. 68). Nahm does not explain why this false application of the analogy took place. However, it is very important to understand why this analogy has been distorted. In his *Commentary on the First Book of the Sentences* of Peter Lombard (19, 5, 2, ad 1), St. Thomas points out that there are three classes of analogies, namely, those which are only real, those which are only logical, and those which are both real and logical. The "great analogy" should be considered to be both real and logical. Since the springboard of this analogy is God rather than a creature, this analogy is aptly called a "descending analogy." And since this analogy is in relation to God, it is a theological analogy. The grasp of a descending theological analogy, however, presupposes that the human mind has been trained to recognize ascending theological analogies; and this recognition, in turn, presupposes that the mind has been well trained in grasping all the real-and-logical analogies proper to philosophy in an ascending order. As St. Thomas indicates both by explicit doctrine and by practice, the human mind gains its first knowledge of and training in analogy in mathematics, wherein the analogy (or proportion) is in the genus of quantity. As the mind goes into the sciences of general

and special physics, psychology (according to its three parts), moral science (embracing ethics, domestics, and politics), and metaphysics, each preceding science has proper analogies which prepare the mind for the greater analogies in each of the succeeding sciences. Thus the Angelic Doctor carefully indicates physical, psychological, moral, and metaphysical analogies when he examines the matters respectively having these analogies. Now just as a metaphysical analogy cannot be easily grasped by the mind untrained in the analogies proper respectively to physics, psychology, and moral science, so a theological analogy (and especially a *descending* theological analogy) cannot be easily grasped or properly interpreted by a mind which has not been *gradually* trained in the philosophical analogies. To the extent, then, that the mind has not been trained in the prerequisite philosophical analogies, the mind can distort the "great analogy" cited by Nahm. Although Nahm does not manifest an explicit knowledge about the development of the mind in analogy, we can be thankful that, at least, his remarks should occasion an investigation into this truth.

The remainder of the work contains some excellent insights regarding the freedom of the artist in relation to the artifact he is to produce. The dominant pedagogical defect in the book, however, is an extreme citation of authors in the body of the text without a corresponding analysis of the authors cited. Since the meaning of the citations remains obscure, this procedure obliges Nahm to determine the matters considered by his own authority rather than by the evidence of what he proposes through his citations.

As we have indicated, the problem about artistic freedom is, strictly considered, a problem within the science of politics. Now although Nahm does not resolve this problem according to its proper causes, yet he does emphasize that it is important to consider the problem in relation to God. His emphasis of this relation, presented in a textbook written also for non-sectarian schools, should bear much fruit.

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Readings in the Philosophy of Religion. **Edited by John A. Mourant. New York: Crowell Co., 1956. Pp. xi + 500 with index. $2.95.**

Anybody teaching philosophy to undergraduates knows how badly needed are books of readings, and happily Professor Mourant of Pennsylvania State has supplied a good one for philosophy of religion. It is good in its own right, and doubly good because, so far at least as we know, it is the only book in its field. Our conviction is that anyone teaching what is called philosophy of religion or natural theology will welcome this book.

Three chief merits of the volume are these. First, the order is good, on the existence and nature of God and some of today's perspectives—by Maritain, Schweitzer, and Buber—on God; then on mysticism, such important people as Evelyn Underhill, George Fox, and St. John of the Cross; next, on faith; next, on evil, with generous passages from St. Augustine; lastly on eschatology. Second, it is evident that the materials are classic, and best of all they do not, as many readings do (perhaps through the editors' unfamiliarity with philosophy), skip from St. Augustine to Descartes. Third, the editor's brief introductions to problems and authors are simple enough for students to make good use of them.

The work has some of its content from the Orient, but we wish that, in view of the world situation, Mourant would include even more Oriental material in revised editions, and that he would be sure to include a whole section on anthropology as related to philosophy of religion.

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The Soul in Metaphysical and Empirical Psychology. **By Stephan Strasser. Pittsburgh, Pa.: Duquesne University Press, 1957. Pp. x + 275. $4.25, cloth $5.00.**

This seventh volume in the Philosophical Series of the Duquesne Studies merits close study on the part of psychologists and philosophers interested in the relationship between scientific or empirical and philosophical psychology. Dr. Strasser, at present visiting professor of

philosophical psychology at Duquesne University, gives evidence of a remarkable knowledge of philosophical tradition and of a richness of philosophical analysis in his study of man's psyche. One can but hope that individuals in search of a fresh and scholarly treatment of the role of the soul in man's makeup will not neglect Strasser's study. Since its publication in 1950 the present work has appeared in Dutch, French and German. The present English translation by Fr. Henry Koren, C. S. Sp. is based on the German edition of *Seele und Beseeltes* (1955), to which the author has added two new sections, the first dealing with the relationship between philosophical analyses of nature and classic hylomorphism, and an appendix in which he discusses the philosophical presuppositions underlying the psychology of behavior. The translator has added a glossary designed to clarify technical terms for which there are no English equivalents. A substantial bibliography and indices of names and subject matter add much to the value of the work.

Strasser presents in the first part of his work an historico-critical survey of some modern philosophical and psychological theories marred by the impact of Cartesian and Lockean ideas. The constructive part of Strasser's work contains three studies of the soul and the "besouled" body to which is added by way of conclusion a comparison of the concept of soul found in empirical psychology with that of the philosophers. Strasser is not intent upon offering an exhaustive study; too many pertinent considerations are wanting. His primary objective is to show that, although both empirical and philosophical psychologies are concerned with man's psyche or soul, there are good reasons for doubting "whether one is justified in identifying the object studied empirically with the soul studied in philosophy." Of particular interest to this reviewer is the author's belief that only by use of the "phenomenological method" can a truly satisfactory answer be given to the perennially perplexing problem of the relationship between empirical and philosophical psychologies. "A problem of the theory of science or epistemology," writes Strasser, "can be clarified only within the framework of a philosophy of science," and "the order and clarification of the fundamental concepts used in the positive sciences are to be expected only from a philosophy which indicates *what is*, i. e., from a metaphysics of being."

Strasser is not unaware of the difficulties arising out of his use of the phenomenological method. Too frequently the phenomenologist is confronted with objections born of prejudice and suspicion which have their roots in historical associations and in the failure of the experts to agree

on the precise meanings of terms. Strasser rejects "phenomenology as a science," also "phenomenology as metaphysics"; he is content with viewing phenomenology as an "ontological method" which permits the metaphysician to transcend the difficulties of "being as subject" and "being as object." The phenomenologist, says our author, places himself "inside" the existential movement of the ego, i. e., inside the ego's "being-related-with" and "being-receptive" of a universe of realities; thus the world no longer appears to him as a "whole objective data" but as an "intentional configuration" which is born and becomes meaningful in the course of an existential movement of orientation. It is to the phenomenological method, thinks Strasser, that "we owe everything we know about the being-alive, the being-'besouled,' the being-I, and the being-a-spirit of an ego." Finally, our author is quite optimistic in believing that by means of a phenomenological analysis of primordial experiences "we will find the right approach to our problems and succeed in justifying a reference to structures of reality which themselves are no longer phenomenologically given."

As to the "neo-Thomist" belief that notwithstanding their formal differences empirical and philosophical psychologies complement each other harmoniously, Strasser maintains that "The problem is not as simple as it seems to be according to these philosophers." He presents an imaginary dialogue between proponents of the two disciplines in which seemingly contradictory qualities are affirmed of the psyche or soul by the empirical psychologist and the philosophical psychologist, an extremely disturbing fact "that cannot be explained by an appeal to the difference of their viewpoint." The "neo-Thomist" is advised not to break off the dialogue; it may be possible to adopt a point of view, thinks Strasser, "from which we can understand each other," and can agree ultimately that the object of research is not the same for the two types of psychologists.

The limitations of space make it impossible for us to follow Strasser in his analyses of the "'besouled' body" (Studies 4 and 5) and of the "interiority of consciousness" (Study 6). Our own reading of those studies prompts us to beg of the reader that he make every effort to read and reflect upon Strasser's existentialist analysis of the psychological nature of man.

We restrict our comments to Strasser's concluding study—"The Concept of the Soul in Metaphysical and Empirical Psychology." We agree with the author's conclusion, namely, that *"the spiritual soul is not the object investigated by empirical psychology."* And, we think

that Strasser makes out a good case against the introspectionists and others who err in their conceptions of the proper objectives of empirical psychology. However, we are not so certain about the validity of the means used by Strasser, that is, his phenomenological analysis. For example, Strasser rightly insists that empirical psychology is a "positive science" and that "it is concerned exclusively with data that can be grasped objectively;" but he goes on to affirm that such a statement does not mean "that the facts studied by the psychologist have necessarily to be perceptible, measurable, or numerable," although they are "concrete realities with which I am directly or indirectly in contact, and which therefore I can describe, analyze or compare." Unless we have misunderstood Strasser's words—we hope we have not done so—we think we have good reason to disagree with our author in his characterization of the "objective data" proper to the positive sciences.

Again, semantic difficulties may lie behind our refusal to accept such a statement as, "By its very nature metaphysics is concerned with the structures of reality that are no longer structures of objects, structures that cannot be seized adequately in an abstractive act of thought. . . ." And, Strasser adds, the reason why we are unable to grasp the "spiritual ego" in an adequate concept is because we "never possess it in the form of a consciousness of 'content' but only in the form of a consciousness of direction." We wish that we might find it possible to agree with Strasser who asserts that his "spiritual ego" is one of those "trans-objective" realities the study of which has lead to his conviction "that this ego is always and of necessity the subject pole of all my real and possible acts and never the object pole of my intentional experience." Finally, we find it impossible to agree with the author when he apparently denies that my intuition of my own ego is an experience of a "this" or a "that." Yes, we agree with the author of *The Soul in Metaphysical and Empirical Psychology* that "being" and "my own ego" are not the proper objects of "positive scientific investigation," but not for the reason given, namely, that they "transcend the limits of all psychological concepts and categories."

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Ethics: The Introduction to Moral Science. **By John A. Oesterle. Englewood Cliffs, N. J.: Prentice-Hall, 1957. Pp. 269, with index. $4.00.**

Judging from most manuals of ethics published during the past fifty years, one would be tempted to say that ethics has proven to be an embarrassing possession to many Christian philosophers. Their attitude towards it has been much like that of a distinguished British monarch towards a man-eating tiger he received from one of his Indian subjects: the king was heard to say that he liked the beast but really didn't know what to do with it. Christian philosophers have been similarly uneasy with ethics, and their uneasiness has been revealed by nothing so much as by their method in handling it as a hybrid of philosophy and moral theology.

Happily Oesterle's *Ethics* does not follow this pattern. The philosophical method which he announces in the first chapter is maintained throughout. He does not pretend that ethics is moral theology or that moral theology is ethics, for he obviously recognizes that it is just as dangerous to confuse reason with revelation as it is to confuse revelation with reason.

Reading through important chapters, such as those which treat the nature of virtue and "the good life," one gets the impression that the author is simply discussing his views, not attempting to impose them. This is, of course, a highly desirable atmosphere to create, and it is also an exceedingly difficult task to accomplish, especially in a manual intended for college students.

To a great extent, the work follows the order of Aristotle's *Nichomachean Ethics,* and Oesterle has drawn heavily from Aristotle's writings, as well as from the writings of St. Thomas. In the early chapters, he establishes the fact that there must be some ultimate end for human acts. He then proposes provisionally that this end consists in happiness, which he defines as being primarily a life of virtue in accordance with reason. With this as his point of departure, Oesterle then studies the virtues individually, integrating them around the cardinal virtues of prudence, justice, temperance, and fortitude. It is this insistence upon the virtues and the rôle they play in moral life that distinguishes the present volume from many ordinary ethics books whose approach is negative and legalistic.

Oesterle insists that the problem of human happiness is often needlessly confused by the supposition that one single object must realize

the whole of human happiness. To make this supposition is to ignore man's humanity, his composite nature. Man is not intellect alone or will alone. Consequently, man's ultimate natural end, the end proportionate to his nature, must be "a life of virtue in accordance with reason, a life of both contemplation and action . . ., a life that can be attained by man in his temporal terrestrial life. . . ." This is the "only kind of happiness to which man by nature is ordered" (page 251).

With these remarks, Oesterle clearly takes his stand with those who insist that any ultimate natural end which man might have will have to be fulfilled before death. He seems to reject implicitly the idea that man could have an ultimate natural end which would consist in a fuller (although still indirect) knowledge of God than is possible in this life.

This view of man's ultimate natural end is, needless to say, the position taken by Aristotle and referred to many times by St. Thomas as belonging to "the ethics of the philosophers" as distinguished from "the ethics of the theologians." There are undoubtedly many advantages to such a position. It avoids, for instance, the problems involved in considering the soul after its separation from the body as being in a "natural" condition—a condition which, it seems, Aristotle regarded as being not only unnatural but even metaphysically impossible. Moreover, by discussing man's destiny after death exclusively in terms of the supernatural end to which man has been elevated, Oesterle can keep his views and reflections centered in an actual, rather than in a purely hypothetical order.

Yet, if we assume that we can demonstrate personal immortality, which Oesterle freely admits, how can we confine man's ultimate natural end to this life? It is true, as the author points out, that we do not understand very much about what a "natural" life after death would be like; and it is certainly true that the soul apart from the body is not a man. Yet the continuance of life after death would seem to belong to the data of the moral philosopher and should have some significant ethical implications, as for example, in the important questions of sanction for the moral law.

Oesterle has two unusual chapters on continence and friendship, and each is excellent. Here as elsewhere the reader always feels that the author is not "propounding" but simply inviting discussion and personal reflection. In creating this invitation to philosophical dialogue Oesterle has swept away much of the lumbering machinery of definitions which too many authors insist upon "for clarity" when it actually impedes comprehension.

Short bibliographies appear at the end of each chapter. These lists are usually excellent, although it might be suggested that in future editions all references to other manuals be simply dropped and more references to classical writings be added. Moreover, it is a pity that hardly any use is made of the abundant ethical material found in journals published here and abroad. These details, of course, hardly detract from what is certainly one of the best scholastic manuals to be published in this country in recent years.

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Essays in Literary Criticism. **By George Santayana. Selected and edited, with an Introduction, by Irving Singer. New York: Charles Scribner's Sons, 1956. Pp. xxviii + 414. $7.50.**

Dr. Irving Singer, assistant professor of philosophy at the University of Michigan, and author of the forthcoming book, *Santayana's Aesthetics: A Critical Introduction,* has performed a very worthwhile service both for philosophers and students of literary criticism by selecting and editing several of George Santayana's writings of which the dominant theme is literature, either as to literary forms or authors.

The editor has divided Santayana's writings into three parts. He tells us: "In making this edition, I found that the essays fell naturally into three parts. Part I is entirely composed of *Three Philosophical Poets,* which stands by itself as a unit. Part II is made up of scattered essays on particular authors and works of literature. Part III comprises writings about the nature of poetry and prose in general. The essays are not arranged in the order of their composition, but roughly in accordance with the historical and philosophical continuity of their subject-matter."

Interwoven with the literary criticism and always serving as criteria of judgment are the principles of Santayana's philosophy. This explicit combination of philosophy and literary criticism is noted by Singer in his introduction. "It is a rare genuis who can combine good philosophy with good literary criticism. George Santayana was a genius of this sort. One is even tempted to say that his genius was pre-eminently of this sort, and that in the special province of philosophical literary criticism his contribution was more unique and more

permanently outstanding than in any other field. . . . Even among the greatest literary critics there have been few who could do Santayana's 'job of work.'" Singer continues, "Unlike recent critics, [Santayana] was not particularly interested in the principles of rhetoric. For better or for worse, his criticism generally avoids both exegesis and linguistic analysis. . . . Except for a few remarks about euphony and euphuism, he has little to say about the rudiments of poetry. What excites the muse in him, and what makes his criticism so exciting, is rather an awareness of the human significance of literature—the way in which it can be used to communicate a sense of what is real and important."

While I disagree that Santayana in these essays has little to say about the rudiments of poetry, I agree that the major theme of his writings collected in this book is the "human significance of literature." That which is "real and important" for Santayana is, however, his idealization, namely, reason's discovery of the ideal, the essence which is beyond the limit of space and time, a reality only in man's spirit, a suggestion of something greater that he can become, and a bowing to the inevitability of nature's changing, onmoving thrust, material nature of which even man's spirit is but a part, and apart from which man cannot exist. To admit frankly and courageously this material confinement, to realize that eternal essences, and ideals and spiritual fulfillment are all only the product of man's own reason which is of the material world—this is wisdom for Santayana. And however much he may admire and praise the wholeness of theme and the full view of life shown in some of his selected poets, the ultimate value of such poetical work is judged according to Santayana's own concept of what nature is, and what is the purpose of human existence. "Existence," says Santayana, "is indeed a comedy, in that it is a series of episodes, each blind and inconclusive, though often merry enough, but all having their fulfillment beyond themselves, in a cosmic music which they help to make without knowing it."

In spite of Santayana's well-known idealized naturalistic philosophy, his appraisal of certain authors or literary forms and many of his reflections are valuable and eminently memorable. His broad theories on literary criticism, however, are deceptive. His very beauty of language and his use of old, acceptable terms in new, unacceptable ways could easily lead to a facile, though erroneous, agreement with his stated conclusions. When translated into Santayana's real meaning the conclusion becomes something quite different. Such is the following: "Our poets are things of shreds and patches; they give us episodes and studies,

a sketch of this curiosity, a glimpse of that romance: they have no-total vision, no grasp of the whole reality, and consequently no capacity for a sane and steady idealization. The comparatively barbarous ages had a poetry of the ideal; they had visions of beauty, order, and perfection."

This edition has two notable defects. First, the original sources are indicated, when at all, only in an introductory note at the beginning of the book. Several of the essays lack even this indication of their original setting. Its use as a source book is thus diminished. Second, a curtailment of usefulness arises from the lack of an index. Santayana repeats in variation theme after theme but in different essays. He judges the same author from many points of view in different essays. A cross-referencing of these would be very helpful both to the philosopher and literary critic. Again, there are major themes whose varied treatments are well worthy of careful comparative reading. Such themes are the relation between philosophy and poetry, and between philosopher and poet, the distinction between prose and poetry, the meaning of beauty, Santayana's view of religion and its relation to poetry, the meaning of romanticism in both literature and philosophy, the meaning of barbarism, the creation of characters in literature. These and many more are the rewarding topics treated in Santayana's elegant style and with his thought-provoking criticism.

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Existentialism and Religious Belief. **By David E. Roberts. Edited by Roger Hazelton. New York: Oxford University Press, 1957. Pp. viii + 344, with index. $5.00.**

As an objective account of what Pascal, Kierkegaard, Heidegger, Sartre, Jaspers and Marcel have thought and written, the essays in this little volume are superior. That in itself is no mean accomplishment, and it is to the credit of the deceased author (and his editor) that the inevitable over-simplifications are cut very close to the margin. The significance of Roberts' study, however, lies in the second half of his title. This is not a survey presentation of existentialist rumblings, but a theologian's critique. Without hedging, Roberts commits himself to the position that none of the existentialisms is a self-sufficient philosophy. Their common value is that of the corrective, a corrective no less important for the theologian than it is for the philosopher.

Though his comments are generally brief and modest, Roberts has drawn bright red circles around the cardinal existentialist emphases as they intersect with the theology of revelation. It was Pascal's explicit purpose—and in this sense be becomes a true forerunner of existentialism—so to point up the human riddle, the grandeur and misery of man, the enigma of freedom and bondage, that "before" the Christian message would be exposed, man's *need* for transcendence would be recognized and deeply felt. Nevertheless, for Pascal, and later for Kierkegaard, the vital and dynamic reply to this need was the revealed word of God.

If in succeeding centuries this Gospel apologetic ceased to be the center around which existentialist reflections tossed and turned, rapport with the Christian message still shows in glaring parallels. Human freedom is the point of focus in all of the existentialisms. Every existentialist thinker tries to express the difference between a truth which is disengaged from the person and the greater truth which involves personal commitment. Within these parallels, stands the corrective. Where theology bogs down under unsuspected materialist, or determinist, or rationalist pressures, the existentialist attitude should occasion a healthy reaffirmation of authentic Christian values.

At the same time, Roberts is aware that the Christian theologian cannot apply this existentialist corrective uncritically. The dialectical cynicism of Sartre must be challenged for the sophistry of its basic assumptions, though perhaps Roberts could have shown more expressly how this system integrated on the denial of God becomes, on about face, a "via absurda" pointing to His existence. In the final analysis, Heidegger's attempt to situate guilt and conscience and decision apart from the Christian message is historically unrealistic. Nor can the theologian maintain silence in the face of Jaspers' aprioristic treatment of the sacred text. These and similar observations, the theologian must be willing to make, and Roberts does so in the best tradition of scholarly fairness and liberal objectivity.

Roberts indicates that one of the weaknesses of the existentialist quest is its tendency toward isolationism. Kierkegaard's faith was strictly inward and individual. In Roberts' view, Kierkegaard did less than justice to the Church, for it presented a block to an exclusively "I-thou" experience. Kierkegaard was cursed by "shut-upness," never knowing the meaning of fellowship, religious or secular. His neighbor was ultimately an abstraction. Solitude is also the theme in Heidegger. Sartre sees the interpersonal as isolation and conflict. His "we-feeling"

is merely therapeutic. Even Pascal overemphasized the mystic encounter of his conversion and moved toward an isolationist spirituality. Jaspers does stress existential communication, but only Marcel gives convincing prominence to the togetherness of Christianity.

This isolationist trend is strictly in character. Existentialist thought pivots on freedom and subjectivity. Freedom is a profoundly personal affair. The subjectivity of engaged truth, of the truth that is meaningless apart from the being-involved of this concrete person, is a strictly individual phenomenon. Roberts faced this problem of the isolationist peril. His private theological perspective, however, prevented him from bringing out in all its richness the drastic renunciation of isolationism that is fundamental to Christian revelation.

Now it may not be enough to repeat in good scholastic fashion that men are numerically distinct and specifically the same. This, of course, is true, but it is only a small part of the reality. From the most thoroughly metaphysical viewpoint of personal existence, we are, each of us, utterly unique. And since all properly human experience is synthesized ontologically at the pole of this personal existence, the experience itself is unique. On the other hand, it is the tendency of existentialist thought to smother completely the parallelisms that obviously do occur within the totality of this human experience. For the existentialist-minded, it is not an easy thing to admit that "he" feels the same as "I." Yet, this attitude is no more realistic than the naive opposite which ignores existential unicity. At any rate, such a position has no place in Christianity. Ultimately, the equation of salvation is not God and me, but God and us. The existential isolationist may not like the idea, but Christian sanctity envelops the paradox of the essentially individual and essentially communal. Moreover, each truly Christian experience is assimilated to the life of Christ. Because, in this profound sense, "mine" is like Christ and "his" is like Christ, "mine" is also like "his."

Closely connected with existentialist isolationism is the problem of reconciling the formulations of revealed theology with a personal transcendence that should remain first, last, and always, open and undefined. Roberts has brought this out most clearly in his discussion of the "cipher" in Jaspers. For Jaspers, theology too quickly makes revealed truth static, finished, and the exclusive possession of a single group. But again, Roberts' own position seems to have postponed indefinitely the moment at which revealed theology must close on this point with the existentialists. The revealed word of God does not shut

off dynamic transcendence, but it does absorb this quest into a finality. It is not at all a question of philosophizing, nor of superimposed propositions. "Fides ex auditu"—the word of God has been spoken. It is man's duty and privilege to hear it. Refusal in the name of a limitless transcendence is a refusal of grace, and even in existentialist terms, since Revelation in and through Christ's Church is a fact of history, such transcendence becomes itself an unreal hypothesis.

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Fifty Years of Chinese Philosophy, 1898-1950. **By the Rev. O. Brière, S. J., Aurora University of Shanghai. Translated by Dr. Lawrence G. Thompson. London: George Allen and Unwin Ltd., and New York: Macmillan. Pp. 159, with index. $4.75.**

This book of Fr. Brière is a bibliographical survey of the representative works written by Chinese philosophical writers during the first half of our present century. It contains a wealth of bibliographical information: references, an index of authors, one of publishers, and notes occupy one third of the book. Two thirds of the book, or about ninety-nine pages, is dedicated to the survey of 83 works of 54 authors, which form one third of all the works and authors mentioned in the book. It is in this richness of bibliographical information that the special value of the book consists. Fr. Brière is clear, concise, and accurate in the description of both the authors and their works.

The Authors:—Almost all the authors are the alumni of the Universities of Europe and America, mainly of France, Germany, England, Russia, and above all the United States; plus a few authors, who studied the western philosophies in Japan. They brought back to their homeland practically all the philosophies which were predominant in Europe and the U. S. A. from 1860 to 1940. However, symptomatically, the general trend of thought represented and promoted by them was the spirit of scientism and positivism, and this in theory and in fact led to the triumph of dialectical materialism on the mainland of China. The modern western influence provoked the revival of a thoroughly atheistic Buddhism (pp. 41-42). The renascence of Confucianism was material-

istic, rationalistic, and communistic (p. 14; p. 53); or idealistic and state-socialistic (pp. 30-31); or Bergsonian and vitalistic (p. 36; p. 60). In short, the history of Chinese Philosophy in the last 50 years is chiefly concerned with the introduction of western ideologies into China by Chinese writers trained in the western schools. More properly, it is a history of the movement of western thought which led eventually to the establishment of Marxism in the land of Confucius and Buddha.

The Works:—With the exception of two or three, the works of these writers were collections of fragmentary essays, articles, and translations of western authors, often eclectic and superficial, seldom systematic or original (p. 48; p. 54). The best of the works intended the popularization of ideas learned and selected from masters in Europe and the United States (pp. 24 ff.; pp. 78 ff.). Their success was the docile imitation of western models (p. 87). However, their strength derived from a unanimous majority of those convinced of dialectical materialism, as the logical and complete realization of the western spirit of scientism and rationalism (p. 19; p. 71; pp. 104-106). "Science and Democracy" were their slogans. Scientism as synonymous with materialism, and democracy as synonymous with socialism were the stanch conviction of this majority (pp. 71-85).

Fr. Brière's book will serve as an excellent bibliographical guide to philosophers, diplomats, inter-racial psychologists, sociologists, and politicians, and to any one else who may like "to try to penetrate into the chaos of theories and systems which were imported into China, and which were clashing together during the last fifty years" (p. 17). His book possesses great value because he employs "sources," no longer available to the free world since the communist occupation of the Chinese mainland. Technically, the identification of Chinese names, terms, and book-titles by Chinese characters will serve many practical purposes.

Dr. L. G. Thompson's translation from the French is commendable, and the thoughtful addition of historical notes and bibliographical references make the book most helpful from all view-points, within the limits set by the author, who did not intend to be exhaustive.

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Books Received

Alexander, Ian W. *Bergson.* New York: Hillary House, Inc., 1958. Pp. 109. $2.00.

Anscombe, G. E. M. *Intention.* Ithaca: Cornell University Press, 1957. Pp. xi + 93. $1.50.

Anton, John Peter. *Aristotle's Theory of Contrariety.* New York: The Humanities Press, Inc., 1957. Pp. xi + 253, with index. $5.00.

Argyle, Michael. *The Scientific Study of Social Behaviour.* New York: Philosophical Library, Inc., 1957. Pp. 239, with index. $6.00.

Beckwith, Burnham P. *Religion, Philosophy and Science.* New York: Philosophical Library, Inc., 1957. Pp. 241, with index. $3.75.

Butterfield, Herbert. *The Origins of Modern Science.* Revised Edition. New York: The Macmillan Company, 1957. Pp. x + 242, with index. $3.00.

Calvin, John. *On the Christian Faith.* New York: The Liberal Arts Press, 1958. Pp. xxxiii + 219, with index. $0.95.

Chisholm, Roderick M. *Perceiving: A Philosophical Study.* Ithaca: Cornell University Press, 1957. Pp. xi + 203, with index. $2.75.

Chroust, Anton-Hermann. *Socrates Man And Myth.* Notre Dame: University of Notre Dame Press, 1957. Pp. xiv + 336, with index. $6.75.

Cohen, Arthur. *Martin Buber.* New York: Hillary House, Inc., 1958. Pp. 109. $2.00.

Conference On Professional Responsibility. Newark: Seton Hall University School of Law, 1956. Pp. 118, with index. *

Contemporary Approaches To Cognition (Symposium). Cambridge: Harvard University Press, 1957. Pp. 210. $4.00.

Cornu, Auguste. *The Origins of Marxian Thought.* Springfield, Illinois: Charles C. Thomas, 1957. Pp. viii + 128, with index. $3.75.

De Tonquédec, Joseph, S. J. *La Philosophie de la Nature. Première Partie. La Nature en général. Prolégomènes.* Paris: P. Lethielleux, 1956. Pp. 103. *

Dixon, W. Macneile. *The Human Situation.* New York: Oxford University Press, 1958. Pp. 448, with index. $2.75.

Friedrich, C. J. *Constitutional Reason of State.* Providence: Brown University Press, 1957. Pp. xi + 131, with index. $3.00.

* Where price is not given, it was omitted by publisher in review copy

Fowlie, Wallace. *Claudel.* New York: Hillary House, Inc., 1958. Pp. 111. $2.00.

Gasset, Ortega Y. *On Love.* New York: Meridian Books, Inc., 1957. Pp. 204. $3.50.

Gilson, Etienne. *Painting and Reality.* New York: Pantheon Books Inc. 1957. Pp. xxiv + 365, with index. $7.50.

Grene, Marjorie. *Heidegger.* New York: Hillary House, Inc., 1958. Pp. 128. $2.00.

Hackett, C. A. *Rimbaud.* New York: Hillary House, Inc., 1958. Pp. 109. $2.00.

Hawkins, D. J. B. *Crucial Problems of Modern Philosophy.* New York: Sheed and Ward, 1958. Pp. 150. $3.00.

Hayen, André. *La Communication de l'Etre.* Paris: Desclée de Brouwer, 1957. Pp. 189, with index. 120 Fr.

Hendel, Charles W. (ed.) *The Philosophy of Kant and Our Modern World.* New York: The Liberal Arts Press, 1957. Pp. vii + 126. $2.75.

Hocking, William Ernest. *The Meaning of Immortality in Human Experience.* New York: Harper and Bros., 1956. Pp. xviii + 263, with index. $3.50.

Jaeger, W. *Aristotelis Metaphysica.* New York. Oxford University Press, 1957. Pp. xxii + 311, with index. $4.00.

Kirk, G. S. and Raven, J. E. *The Presocratic Philosophers.* New York: Cambridge University Press, 1957. Pp. xi + 487, with index. $9.50.

Man and Time—Papers From the Eranos Yearbooks. Ralph Manheim, translator. New York: Pantheon Books, Inc., 1956. Pp. xx + 414, with index. $5.00.

Maritain, Jacques. *On the Philosophy of History.* New York: Charles Scribner's Sons, 1957. Pp. xi + 180, with index. $3.50.

Mayer, Frederick. *Education and the Good Life.* Washington: Public Affairs Press, 1957. Pp. 123. $2.50.

McLaughlin, Patrick J. *The Church and Modern Science.* New York: Philosophical Library, Inc., 1957. Pp. 374, with index. $7.50.

Mill, John Stuart. *Considerations of Representative Government.* New York: The Library of Liberal Arts, 1958. Pp. xliv + 275, with index. $0.90.

Missenard, André. *In Search Of Man.* New York: Hawthorn Books, 1957. Pp. 346, with index. $5.95.

Mitchell, Basil (ed.) *Faith and Logic.* Boston: The Beacon Press, 1957. Pp. v + 222, with index. $6.50.

Moulyn, Adrian C. *Structure, Function and Purpose.* New York: The Liberal Arts Press, 1957. Pp. ix + 198. $4.00.

Mueller-Beham, Albert. *Human Relations and Power.* New York: Philosophical Library, Inc., 1957. Pp. xxi + 410, with index. $3.75.

Newmeyer, Sarah. *Enjoying Modern Art.* New York: The New American Library, Inc., 1957. Pp. 272, with index. $0.50.

Noonan, John T. *The Scholastic Analysis of Usury.* Cambridge: Harvard University Press, 1957. Pp. xii + 432, with index. •

Otto, M. C. *Natural Laws and Human Hopes.* Denver: Alan Swallow, 1957. Pp. 97, with index. $1.50.

Passmore, John. *A Hundred Years of Philosophy.* New York: The Macmillan Company, 1957. Pp. 523, with index. $5.25.

Pearson, Karl. *The Grammar of Science.* Reprint. New York: Meridian Books, Inc., 1957. Pp. xix + 394. $2.10.

Piaget, Jean. *Logic and Psychology.* New York: Basic Books, Inc., 1957. Pp. xix + 48. $2.00.

Popper, Karl R. *The Poverty of Historicism.* Boston: The Beacon Press, 1957. Pp. xiv + 156, with index. $4.00.

Porta, John Baptista. *Natural Magick.* New York: Basic Books, Inc., 1957. Pp. xi + 409. $7.50.

Radin, Paul. *Primitive Man as Philosopher.* Reprint. New York: Dover Publications, 1957. Pp. xl + 456, with index. $2.00.

Rahv, Philip. *Image and Idea.* Reprint. Norfolk: New Directions, Inc., 1957. Pp. xi + 241, with index. $1.35.

Recktenwald, L. N. *Meaning and Structure of Personality.* Villanova Press, 1957. Pp. 68. •

Romanell, Patrick. *Toward A Critical Naturalism.* New York: The Macmillan Company, 1958. Pp. xv + 88, with index. $3.25.

Ross, W, D. *Aristotelis Politica.* New York: Oxford University Press, 1957. Pp. x + 282, with index. $4.00.

Schlegel, Friedrich. *Literary Notebooks 1797-1801.* Toronto: University of Toronto Press, 1957. Pp. 342, with index. $5.50.

Studies In Ethics. Tulane Studies in Philosophy Volume VI. New Orleans: Tulane University, 1957. Pp. 127. •

VanderVeldt, James H.; Odenwald, Robert P. *Psychiatry and Catholicism.* Second Edition. New York: McGraw-Hill Book Company, Inc., 1957. Pp. ix + 474, with index. $6.25.

Von Mises, Ludwig. *Theory and History.* New Haven: Yale University Press, 1957. Pp. ix + 384, with index. $6.00.

Weiner, Philip and Noland, Aaron (eds.) *Roots of Scientific Thought.* New York: Basic Books, Inc., 1957. Pp. x + 677, with index. $8.00.

Weiss, Paul. *Modes of Being.* Carbondale: Southern Illinois University Press, 1958. Pp. 617, with index. $10.00.

Whitney, Frank P. *School and I.* Yellow Springs, Ohio: The Antioch Press, 1957. Pp. 173, with index. $3.00.

Wuellner, Bernard. *A Christian Philosophy of Life.* Milwaukee: The Bruce Publishing Company, 1957. Pp. ix + 277, with index. $4.25.

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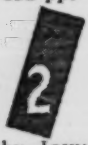

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